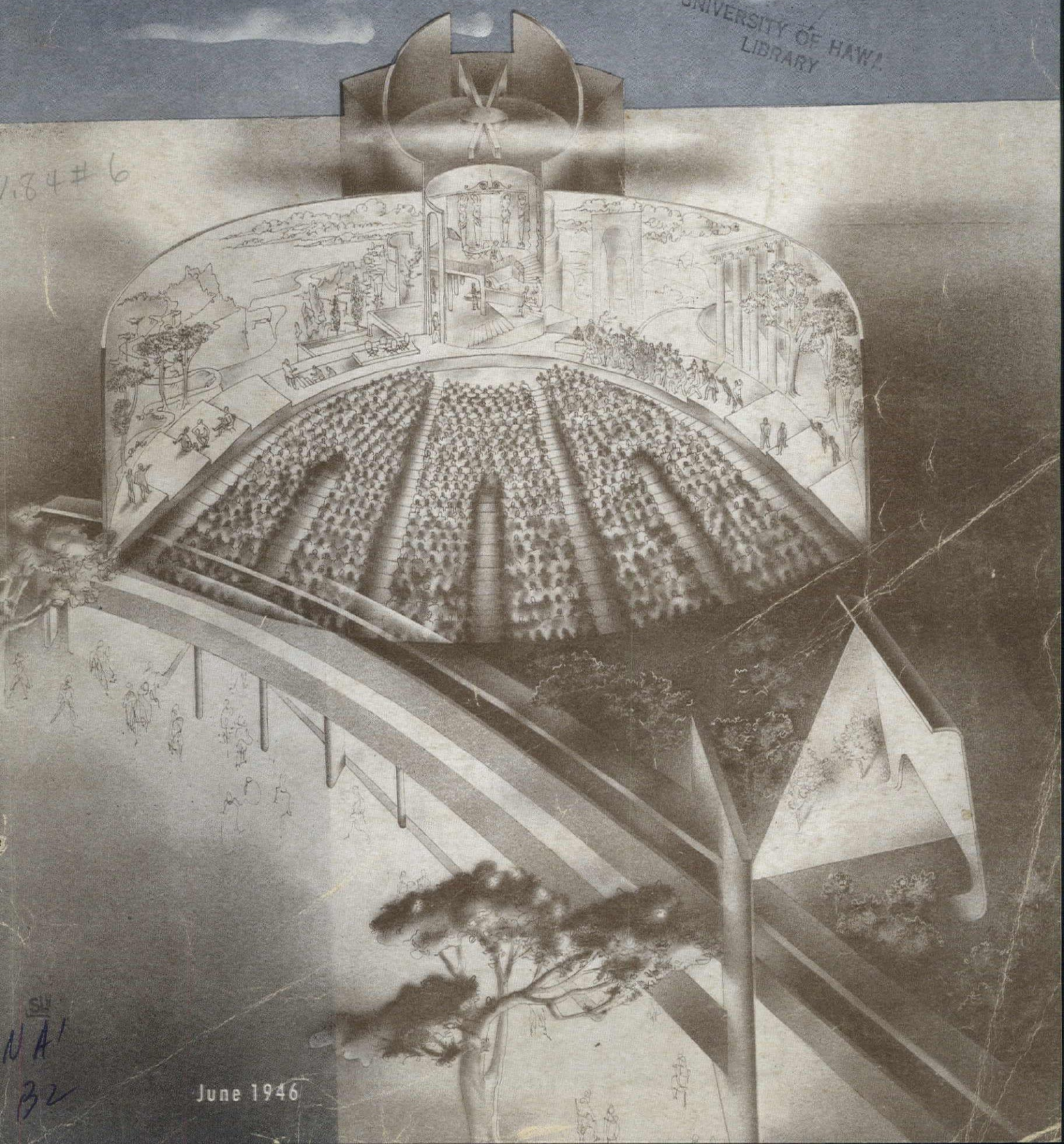
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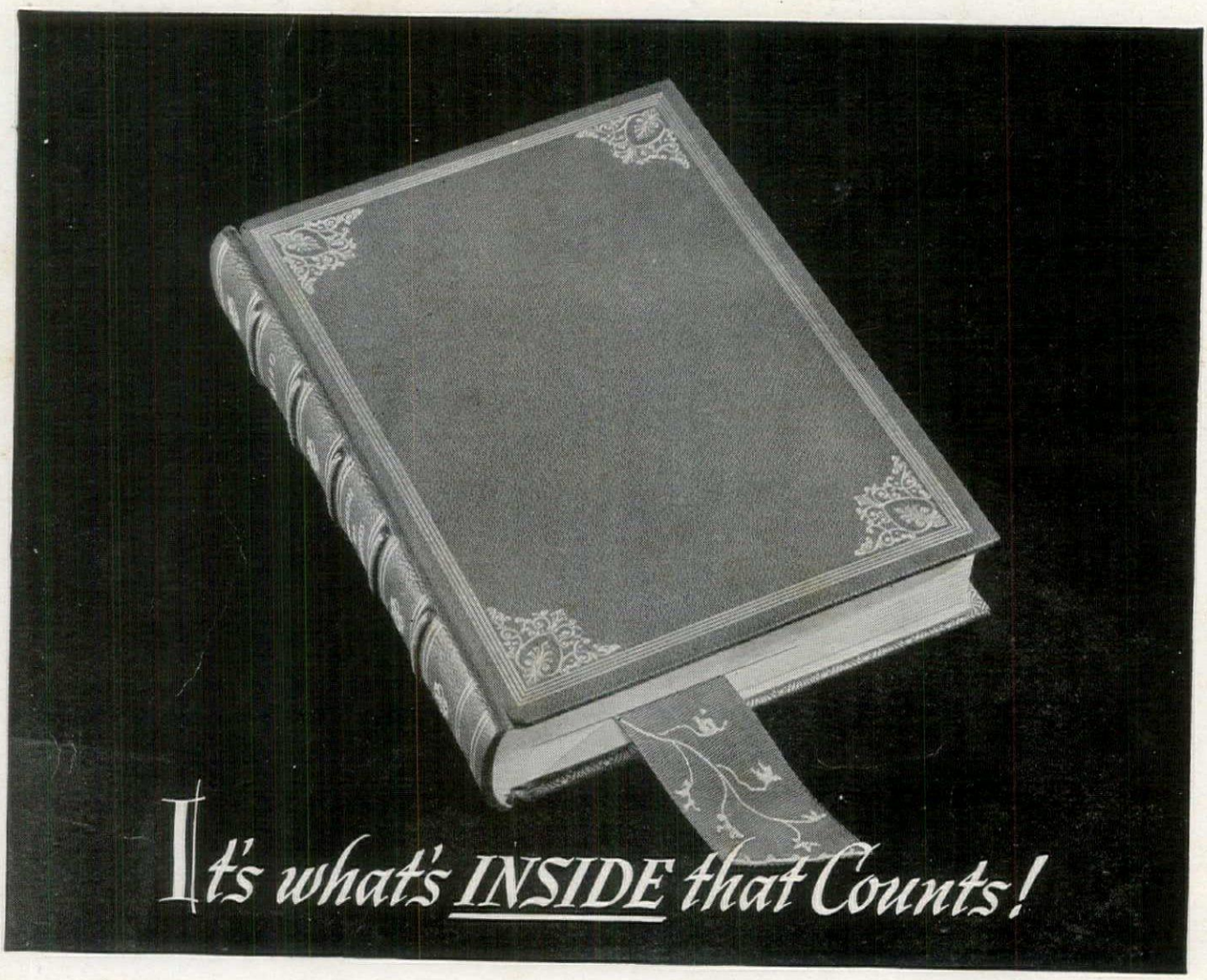
FORUM

Magazine of Building

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June 1946



NO MATTER how fine the cover—it's the "inside story" that decides the quality of a book.

It's what's *inside* that makes the big difference in performance of a fine building product, too.

Take the long, tough fibres in the core of Celotex cane fibre building products, for example. These closely-woven fibres imprison millions of tiny air cells—create the ideal insulating qualities of Celotex board.

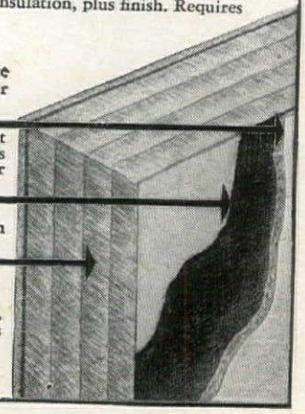
Examined under a magnifying glass, the serrations or hooks on each fibre can actually be seen. These interlocking hooks—more like bamboo than any other domestic fibre—give Celotex products their superior structural strength and durability.

All Celotex insulation board products are specially processed to make them water resistant—and treated by the exclusive Ferox process to protect them against dry rot and termites. They're easy to handle, easy to apply, economical to use.

So look to—and learn to depend upon—these quality cane fibre building products made by The Celotex Corporation. And keep in mind that on literally hundreds of thousands of building jobs they have *proved* that *they have the inside quality that counts.*

Quick Facts on Cemesto—a typical Celotex cane-fibre building product

A multiple-function material used in home and industrial building jobs as wall units, room partitions, and roof decks. Cemesto is fire and moisture resistant, eliminates need for intermediate support, combines in *one* material both exterior and interior surface, plus insulation, plus finish. Requires no painting.



Color: Warm grey.
Sizes: 4′ wide x 4′, 6′, 8′, 10′ or 12′ long in thicknesses of 1⅛″, 1-9/16″ and 2″.

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Cover by Hermann Herrey

THE TRUTH ABOUT

UNTIL now, you've heard about Aquella from everybody but us. First...there was Kurt Steel's absorbing article ("Dry Cellars") in the December 15, 1945 issue of Forbes Magazine.

Second...there was the condensation of this same article which appeared under the caption "Water Stay Away from My Wall" in the January issue of the Reader's Digest.

Third...there was a flood of anonymous letters containing garbled references to a Federal Trade Commission complaint, as well as a copy of a letter dated December 29th, 1945, which purported to have come from the Director of the United States Bureau of Standards.

Why you've not heard from us until now...

In the first place, we were far too busy getting out production to meet the nationwide demand for Aquella. Thousands wanted to be Aquella distributors. Thousands wanted to be Aquella dealers and contractors. And many, many thousands more wanted to buy Aquella for homes, institutions, and factories. Aquella had captured the public's imagination overnight.

Furthermore, at first we thought that this anonymous attack was just the work of some small, misguided competitor. Then, when the vast extent of the campaign became apparent, we conducted an investigation into the source and motives behind the attack.

The complete details and documentary evidence are to be found in our brochure "The Truth About Aquella."

The Bureau of Standards never intended to discredit Aquella

On December 29, 1945, an unsigned letter came from the office of the United States Bureau of Standards written to Forbes Magazine and the Reader's Digest, protesting the publication of Mr. Steel's article.

After the Director of the Bureau was informed this letter was being reproduced and circulated by the hundreds of thousands for the purpose of disparaging Aquella, the Bureau refused to permit further public distribution of copies.

What the Bureau then did was to write *other letters* stating that the communication of December 29, 1945 was not intended to discredit Aquella.

Nevertheless, thousands of copies of that early letter still continued to be circulated through "mysterious sources."

The complete details and documentary evidence are to be found in our brochure "The Truth About Aquella."

AQUELLA...

The Controversy over "Waterproofing" before the Federal Trade Commission

For sometime back there has been a controversy between the Federal Trade Commission and the waterproofing-industry-at-large concerning the use of the word "waterproof" in advertising. What it boils down to is a definition of the word "waterproof" and not any misstatement of fact. Members of the Commission have their definition; those in the waterproofing industry have theirs. The maker of Aquella was only one of many firms that were cited on the issue.

This issue was raised almost a year ago and a complete answer was promptly filed. No further action was taken.

In the meantime, however, there emanated from the same "mysterious sources," thousands of notices of the Commission's citation—with the dateline conspicuously omitted.

The complete details and documentary evidence are to be found in our brochure "The Truth About Aquella."

Now about AQUELLA itself!

From the time it proved itself on the French Maginot Line, Aquella has demonstrated its effectiveness against moisture and seepage in thousands of instances, in various types of masonry construction. There is no single instance where Aquella has ever failed *when properly applied!*

Further, we are continuing permeability tests under hydrostatic pressures which far exceed any that were ever used on Aquella by the Bureau of Standards.

Complete Documentary Evidence for you!

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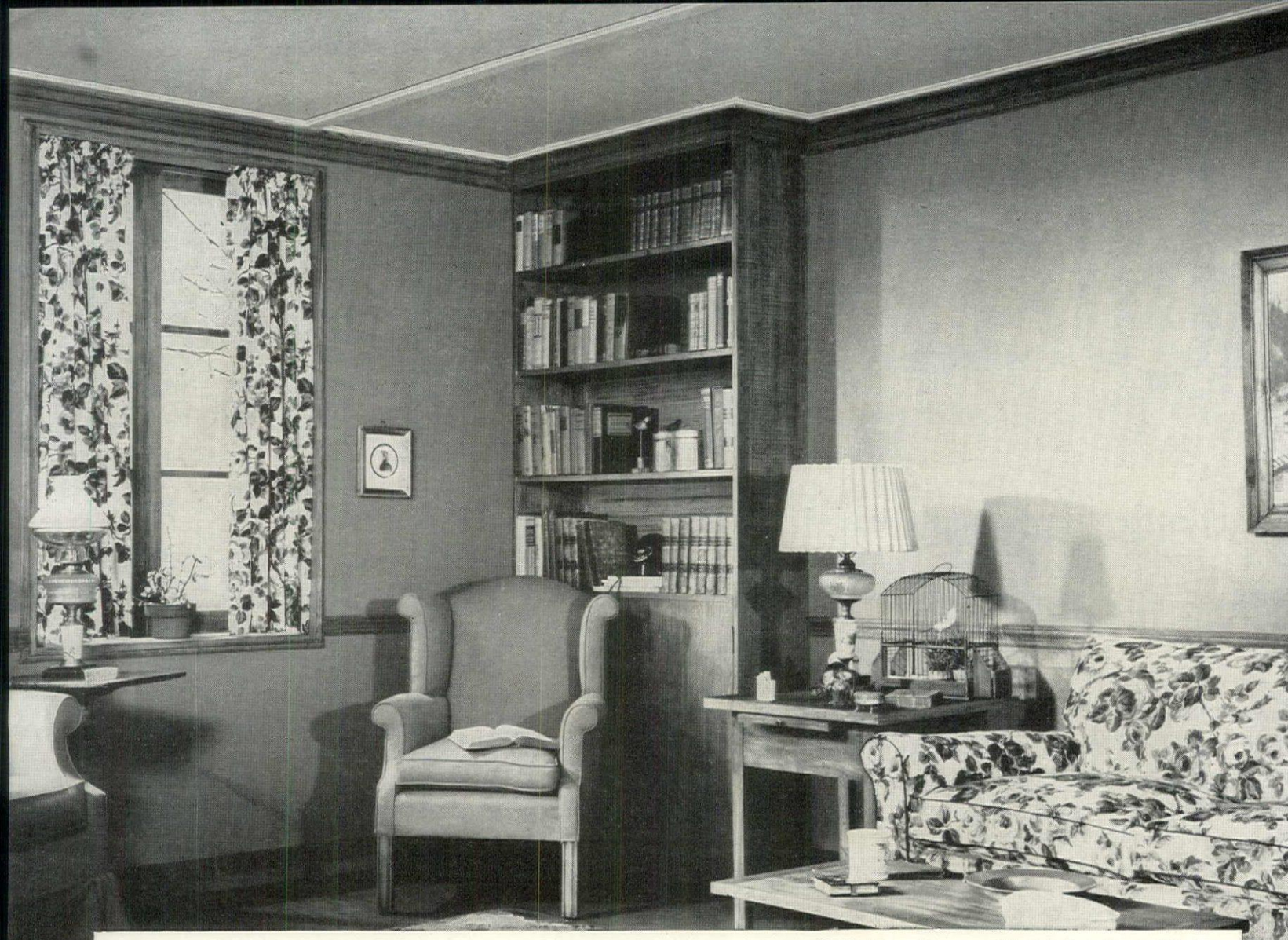
If you are in the waterproofing industry...if you sell waterproofing...if you are counseling customers or clients on waterproofing...or if you are a buyer of waterproofing materials, you owe it to yourself to know the truth!

A copy of this brochure is yours for the asking. Simply write us on your letterhead.

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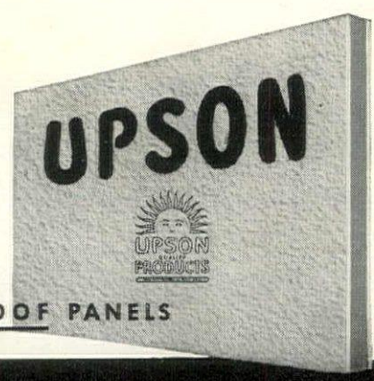
DURING the past five years of stress and strain, a continuous but far-from-adequate stream of Upson Panels has been flowing over the land.

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PACEMAKER IN CRACKPROOF PANELS

NEWS

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BUILDING MONTH. There were as many reasons why Building still bogged down last month as there were building materials and materials producers. And although some Building men said the whole doleful story hung on OPA price ceilings and OPA mismanagement, the more discerning were aware that there was not, nor would be soon, a single pat answer to the industry's multitude of problems. The fuzzy picture of materials lack broke down into dozens of sharply etched examples of just what was holding up supply, but no two of them were exactly alike.

There was, for instance, the problem of the two East Coast gypsum plants, shut down during the war because the boats they used to bring gypsum ore from Newfoundland were taken over by the government. These two big plants are still out of production because the War Shipping Administration has so far refused them permission to buy new boats. There was the problem of the Armstrong Linoleum Co. which may be forced to shut down next month because the U. S. rift with Argentina is shutting off supply of linseed oil. These were some of the more unexpected blocks that were back of shortages expected to last throughout the year. Most critical items: plumbing and kitchen equipment, radiators, plywood, furnaces, brick, lumber, gypsum board, soil pipe.

Basic in the whole building materials picture was the lack of pig iron and steel, and the steel pinch tightened last month with the soft coal strike. Some said that the only way out was a return to the wartime Controlled Materials Plan. But the Civilian Production Administration argued that allotment of more iron and steel to building would simply mean a shut-down in the automobile industry. CPA hoped to find a way to boost steel production.

How much the new building materials subsidy plan would help remained to be seen. With a Congressional OK finally and reluctantly given last month, it was now up to housing boss Wilson Wyatt to show what he could do. Industries which can expect to be the first for which premium payment (subsidy) plans are set up are brick, plywood, hardwood flooring, asbestos roofing, cast iron piping.

Since the first of the year about 171,000 houses had been started. At a glance, this was an impressive figure, pointing to a building rate of about 600,000 houses for 1946. But housebuilders figured that nearly three-fourths of these houses had already stalled for lack of materials or would come to a stoppage shortly. One horrible example came from Denver, where three partly completed apartment houses representing an investment of $300,000 stalled because manufacturers couldn't get $250 worth of the brown paper used to make rock lath. Some gloomy prophecies held that not more than 400,000 houses would be started this year—unless a materials miracle is in the offing.

A tighter crack-down on nonresidential construction seemed imminent. In spite of charges from the Carpenters' Brotherhood that the building limitation order was precipitating unemployment and heavy criticism from other building groups, CPA field men were expected to get orders next month to slow down nonresidential building permits to a mere trickle. A slow-down in issuance of veterans' housebuilding priorities is also ahead. Time must be allowed for materials supply to catch up with priorities already issued.

Congressional delay in passing the housing bill, strikes and government inaction had upped the odds against reaching the Wyatt housebuilding goal this year. But if Congress had been slow to act, many housebuilders felt that Wyatt had been equally slow to use his full authority in upping OPA ceilings and in restricting non-residential building. On the critical materials front, certainly the next 60 days would be decisive.

WASHINGTON

HOUSEBUILDING STILL STALLS

Builders say three-fourths of houses so far started face shut-down.

The emergency housing program was three months old, priorities for some 400,000 houses had been granted, but not many houses were getting built. Things, housebuilders agreed, were growing steadily worse.

As close as anybody could count, about 171,000 houses had been started in the first three months of the year. But 139 directors of National Association of Home Builders, gathered in emergency session last month in Washington, agreed that many of these housebuilding starts were stalled for lack of material. Tens of thousands of others now underway face an imminent shutdown, the builders said, while plans for projects ranging as high as 3,000 units have been abandoned. Some jobs started as long as a year ago are still waiting for radiation—or hardwood flooring—or wiring. Compared to a normal prewar building rate of 3-4 months to finish a house, builders lucky enough to finish at all reported it now takes 6-7 months.

Said the builders: "The situation is drastic, and is growing worse, and it is time the country knew it . . . The fault lies directly on the doorstep of government price and material control policies that are obstructing the production of materials."

From within and without the industry came plenty of specific gripes about the way things were going. Among them:

- CPA, many believed, was being too liberal in granting permits for commercial construction.
- No effective action was being taken to channel basic raw materials—like pig iron and steel—into building materials produc-

AP Photo



VETERAN'S EMERGENCY HOUSING ACT becomes law last month as President signs. Looking on are Representative Wright Patman, author of bill, Senator Robert Wagner, Housing Boss Wyatt, FHA Commissioner Raymond Foley and Representative Brent Spence. Although Wyatt had complained that legislative delay was costing the U. S. 3,000 houses a day, bill waited eight days for President's signature and accompanying ceremonial assemblage.

tion. Many argued that housebuilding would stall until CPA revived some form of the Controlled Materials Plan.

▸ The black market in building materials was daily getting bigger.

▸ The program for moving and re-erecting demobilized war housing operated by the Federal Public Housing Authority was cutting into short builders' supplies. Housebuilders pointed out that the temporary houses require the same amount of plumbing and wiring as a permanent house, that the government program, with its top priorities, was hogging surplus material supplies.

Last month housing boss Wilson Wyatt got most of the legislative authority he had asked to back his emergency housing program (see below). For housebuilders, as the building season reached its peak, the big question was: when will Wyatt really swing into action? It was time, all agreed, for the housing boss who had more power than any Washington housing chief had ever had before to get really tough.

MATERIAL SUBSIDIES APPROVED

Congress finally okays Patman bill.

Although Republican opponents battled to the end with shouts of "slush fund" and "blank check for bureaucrats," housing boss Wyatt last month got Congressional approval to spend $400 million as subsidies for boosting building materials production. The hotly contested Veterans Emergency Housing Act, as it became law late last month, also provided for:

▸ Government guarantee of a market for prefabricated houses.

▸ Renewal of FHA Title VI insurance authority, which provides for coverage of mortgage loans up to 90 per cent of the "necessary current cost" made directly to builders. Use of "current costs" as a basis for determining amount of mortgage differentiates Title VI from FHA's regular Title II operations under which "appraised value" determines amount of loan. Former Title VI limitation of $5,400 for a mortgage loan on a single-family house may be raised as high as $8,100 by the FHA Commissioner where he finds building costs require the boost.

▸ Continuance until June 30, 1947 of wartime priorities and allocation authority for channeling short building materials into construction of low- and medium-priced homes.

▸ Preference to veterans in purchase or rental of new housing.

▸ Authority to the housing expediter to issue directives on building materials prices.

▸ Authority to the expediter to stop or curb lumber export as long as scarcities exist in this country.

By the month's end housing boss Wyatt had taken some important steps to make the program work. He had set up an interagency committee to link the operations of his own organization with the CPA and the OPA. He had asked industrial consultants to come to Washington to work out the materials subsidy program. He had appointed industrial advisory committees to pass upon the decisions arrived at jointly by these consultants and by the NHA staff. He had, in a joint move with the Department of Agriculture, acted to boost lumber output by more than a billion feet this year and next.

Probable first use of subsidies will be to finance the lumber program, which called for:

1. Building of access roads to out-of-the-way government timber stands.

2. Favoring of those bidders in the sale of national forest timber whose output will result in maximum production.

3. Overcutting of timber beyond normal yield for an emergency period in areas of the South and West.

Wyatt assured nervous producers that premium payments (subsidies) would not be used to "develop competition with established business or where they would cause economic dislocation." Premium payments will be used to tap additional sources of production not reached through price adjustments. Examples:

High-cost building materials plants, closed down during the war, will be reopened and re-conditioned.

Raw materials plants, subsidized during the war and now shut down, will be reopened. These will include uneconomical pig-iron furnaces.

Additional sources of production will be tapped. Peeler logs for plywood might be imported from Alaska; subsidies might be used to offset tariff on Canadian logs.

High operating or "bulge costs" of manufacturers who step up production to a two or three shift basis will be absorbed by the government payments.

NHA HERE TO STAY

President Truman tends to this job as part of his reorganization plan.

While prospects dimmed for passage of the Wagner-Ellender-Taft (general housing) bill before the end of this Congressional session, President Truman last month quietly moved to put into effect one of the bill's most controversial points. In a message to Congress, the President proposed under his powers for reorganizing federal agencies that the National Housing Agency be made permanent. The Presidential plan gives NHA even tighter control over its three component parts — the Federal Housing Administration, the Federal Public Housing Authority, the Federal Home Loan Bank Administration — than it now has. Unless Congress turns down the reorganization plan by a majority vote of both houses within 60 days, it will automatically become law.

VETS' LOAN MUDDLE

Housing chiefs deny priority ceilings conflict with VA appraisals.

Veterans' home loan chief Francis Pavesich had spoken his mind. Price ceilings for new houses set under priority regulations were

running 10 per cent or more above the "reasonable value" on which G. I. loans are based, he had said. Veterans lucky enough to locate a house were, therefore, having plenty of trouble getting a G. I. loan. Pavesich had figured that as a rough average ceilings were running a minimum of 10 per cent above "reasonable value" and generally were about twice the value of similar houses in 1939 and 1940.

The plain speaking loan official had stepped painfully on sensitive Washington toes. Within a week housing boss Wyatt, FHA Commissioner Raymond Foley and Veterans Administration head General Omar Bradley got together on a joint statement: "It is regretted that statements made by Francis Pavesich have led to the erroneous impression that FHA processing of priorities has been improperly done and has resulted in housing prices generally higher than justified." FHA had been asked, they pointed out, only to determine a maximum ceiling price for the proposed house, and not to fix a valuation that would be the basis for mortgage lending. Naturally, there were inevitable instances of differences between ceiling price authorizations and VA appraisals, but such instances were not the general rule. Furthermore, new priority regulations will make even closer cost estimates possible.

ALUMINUM-PLASTIC HOUSE

Furniture manufacturer develops revolutionary new building material.

Last month housing boss Wyatt enthusiastically burst into print with praise for a "revolutionary process for making material at very low-cost." It was the first time he had endorsed a specific house or housing product. The product which drew this unprecedented enthusiasm was a house built of aluminum and plastic panels by the John D. Lincoln Furniture Co. in the little town of Marion, Va., to which Wyatt flew last month to have a look.

John Lincoln, who is in the habit of sketching some new piece of machinery while he talks, developed the aluminum-plastic material as housing for radar equipment in war planes. Such structures cost as much as $70 a cubic foot during the war. With the use of new automatic machinery now being assembled, Lincoln believed he could get material cost down to as little as 40 cents a cubic foot. This would mean that a standardized five-room panel house could be built for $3,000, while a nine-room house would cost not more than $6,000.

One big auto company was at month's end reported very interested in coming to terms under which it could back Lincoln's production.

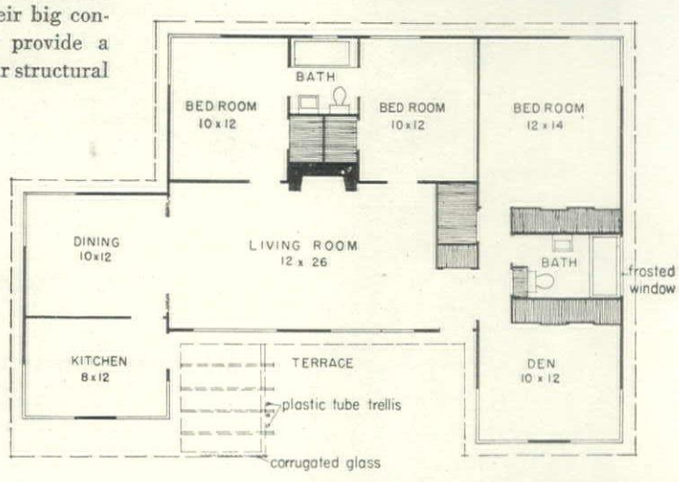
Lincoln said production of the material would be underway on a huge scale within 90 to 120 days and that he could "guarantee" 200,000-300,000 aluminum-plastic houses within the next 12 months.

ALUMINUM-PLASTIC PANELS aim at $3,000 prefab house.

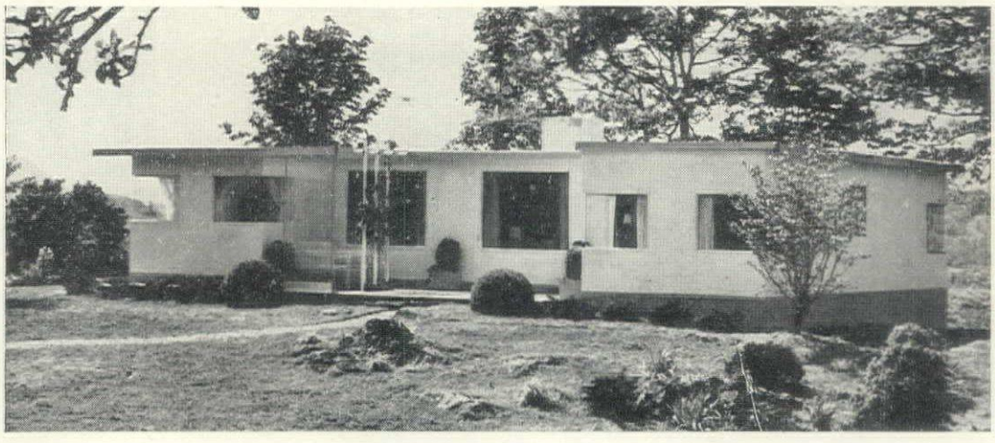
The prefab house below is made mostly of aluminum and paper. Housing boss Wyatt thinks such substitutes for conventional building materials hold much promise for easing the housing crisis. The prefab plastic panels are made by alternating sheets of heavy paper with glue strips. When desired thickness is obtained, sheets are pulled apart in a honeycomb pattern. Honeycomb core is then cut into panels and sprayed with phenolic resin, is finally coated with aluminum skin.

John D. Lincoln has invented a production process that turns out finished panels in one hour at very low cost. In house shown, panels are 8 by 4 ft. and 2 in. thick. Their big construction advantage is that they provide a single-thickness wall which can bear structural load without additional support.





Housing Boss Wyatt (above, l.) poses with inventor Lincoln at door of model house erected at pilot plant in Marion, Va. Plan shown is only one possibility of panel construction system. Lincoln plans various basic designs to fit U. S. regional needs. He has also designed a radiant heating system, which circulates hot air between concrete floor and ground.



NEW CELOTEX CEMESTO BOARD HOUSE on show just outside Washington.



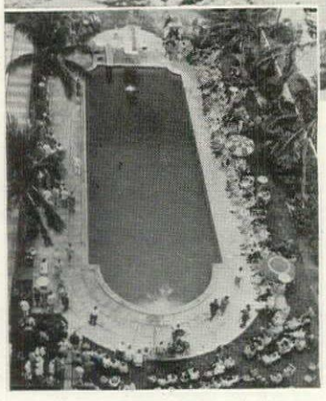
Put up by New Century Homes, Inc., who hold a distribution franchise, this Cemesto Board house is a Celotex answer to the need for a single wall material that can replace seven or eight layers of conventional construction and also substitute for wood. Enough Cemesto Board is now available to build 1,200 houses a month, the Celotex Corp. said. House was built in Bethesda to show Washington housing chiefs the advantages of this low-cost material.



ARCHITECTS meet in Miami Beach for four days of speech-making,

Photos: Don Duffy, Miami News Bureau





AGAINST TROPIC BACKDROP 539 AIA members and their wives sat through four days of speech-making, relaxed at aquacade show high-lighting Sands Hotel reception (left), acquired tans at beach. Above, left to right, G. Jackson, Nashville; K. E. Wischmeyer, St. Louis; Mrs. Jackson, and FORUM editor, Leslie Cheek, Jr.



FRIENDLY JAMES R. EDMUNDS, JR., AIA president, opened the convention, welcomed architects at Sands Hotel reception. With Mrs. Edmunds, (center, above), he greets Ralph Walker, New York (l.).





S. Spaulding
C. Contreras
Jerrold Loebl

S. E. Lunden
L. Justement
H. K. Menhinick

Sumner Spaulding



MEXICO CITY DELEGATES were (l. to r. above) Ramon Corona, Portfirio Alcantara, C. Contreras and F. J. Serrano. Tennessee contingent, (below) included Donald Southgate (ext. left) S. T. Franklin, W. H. Sears, and H. B. Tour (pipe-holders), and camera-fan architect C. T. Jones.



GEORGIA AND FLORIDA groups (l. to r. above): S. W. Goin, H. W. Greer, Mrs. and G. H. Bond, R. R. Nash, Mrs. Ellamae League, H. Bush-Brown, Miss F. Jorgenson, V. Nellenbagen, G. Coffin, Mr. and Mrs. Igor Polevitsky. (Below) Mr. and Mrs. Jed Reisner, New York; S. W. Morgan, Princeton, and Lt. Cmdr. Marshall Shaffer.





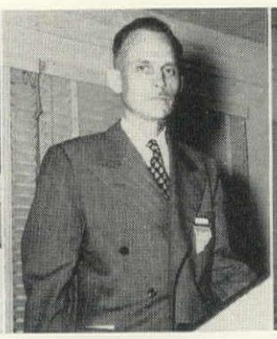
s of sunshine but few new ideas about how to help U. S. meet Building crisis



RECEPTION (around Sands Hotel pool) featured Tom Collins and bathing beauty show. Getting acquainted (l. to r. above) are Mrs. and H. P. Clark, San Francisco, Sumner Spaulding, Los Angeles, and C. Contreras, Mexico City.



Louis Justement



S. E. Lunden



Henry Churchill



Howard K. Menhinick

By late afternoon of hot, damp May 7 most of the 539 architects and their wives attending the American Institute of Architects 78th annual convention had settled down in the five gaudy Miami Beach hotels largely reserved for their use. Most had taken walks to glimpse the fungus of "moderne" hotels crowding each other along the beach and the fringe of regular hotel guests, who seemed to bake motionless in the sun all day and to shake convulsively with rumbas all night. Miami Beach was still aglow with the golden hue of its greatest winter boom.

Against this lush real estate backdrop, the architects next day sat down to contemplate what will probably be the biggest building era in history. Blinking earnestly, they talked of the need for overall planning of land use, of the lag between science and sanity, of the dispersal of cities versus urban renewal. But they had little to say about the U. S. housing crisis, about slum clearance and low-rent housing (beyond a lukewarm endorsement of the Wagner-Ellender-Taft bill qualified by objections to a few sections), or of how the profession could supply leadership in this critical building period.

Convention keynoter Sumner Spaulding, Beverly Hills, Calif., provoked almost the major excitement of the meeting when he tagged Chicago as a stellar example of land mis-use. ("The heart of Chicago is strangled by the filthy river, the elevated railroads and the subway; and here breeds crime, corruption that has nauseated the world.") AIA past-president C. H. Hammond, Chicago, stalked to the rostrum to defend his city, got unexpected support from C. W. Fairweather of Metuchen, N. J., who turned out to be a passionate admirer of Chicago's Loop. After this heated interchange, the convention had only a little time to discuss and adopt a plan proposed by Spaulding and condensed by New York architect Henry Churchill for re-urbanization on a national scale.

That night architects assembled for their annual banquet, heard Federal Public Housing Commissioner Philip Klutznick charge them with lack of interest in the design problem of low-cost housing, awarded a belated gold medal to the late, great architect Louis Henry Sullivan.

Next day the architects re-elected their entire slate of officers, beamingly approved the excellent state of their organization finances, and accomplished what was perhaps their major piece of new business: disapproval of the AIA board's action in assisting the American Hospital Association in drawing up a list of architects qualified for hospital work.

AMERICAN SOCIETY OF PLANNING OFFICIALS meets in New York

Nancy Clemens photos



IN PLANNERS HUDDLE (l. to r.) William A. Bowes, Portland Public Works Commissioner; Rafael Pico, Puerto Rico Planning Board Chairman; ASPO executives Walter H. Blucher and L. P. Cookingham, Regional Housing Expediter Charles Ascher, N. Y.



State planning chairmen: Elisabeth Herlihy, Massachusetts; Don Weeks, Michigan. (Below) Dean Joseph Hudnut, speaker.



CITIES

NEW YORK IN TROUBLE

City's housing woes are like those anywhere else but bigger.

Biggest, richest U. S. city, New York had, after four fumbling months, found house room for about 45 veterans. This was the sorry tale spotlighted last month by Housing Day demonstrations organized by veterans' and citizens' groups.

New York's housing troubles were not much different from those of any other city. But they were on a scale to match its size. Almost every public figure seemed to have a hand in the housing mess, and almost all of them seemed to be pulling in different directions. While proposals for public action ranged dizzily from Quonset Huts on rooftops to a city subsidy for building 50,000 rental units, private builders in the city's suburbs said the materials situation was growing even worse. This month brought only one new promise of a private house-building start: Gross-Morton announced plans for 209 Long Island houses, designed by Arthur E. Allen to accommodate two families each.

Like many another city, New York could not seem to make up its mind where to put the emergency units offered by the Federal Public Housing Authority. Four months ago the city had asked for several thousand temporary units. But by mid-May FPHA had been able to start construction on only one project in Canarsie, Brooklyn, where 45 families had moved in. When regional FPHA chief John Kervick threatened to cancel delivery of 2,000 units ("We can't afford to assign houses needed elsewhere and then wait three months for the city to find a site"), the city finally got down to business, seemed by month's end to have made up its mind on enough sites for 9,000 houses.

State Housing Commissioner Herman T. Stichman (Dewey-appointed) pointedly looked down his nose at the fumbling of the city's Democratic administration; 1,000 vets and their families had already moved into the state-converted barracks at Manhattan Beach. Last month Commissioner Stichman was further bolstering the state's reputation for prompt housing action by picking locks on 37 hotel apartments seized by the state to meet a Long Beach housing crisis when the owner refused access.

Meantime, Planning and Park Commissioner Robert Moses (who had also acquired the additional job of Construction Coordinator) briskly went ahead shoving down houses to make way for expressways. To a sharp reproof from the American Legion, Moses replied: "You cannot make an omelet without cracking eggs." Some 51 houses standing in the way of Moses's omelet were being moved to new locations at city expense.

The Moses-backed law passed by the state legislature to encourage rehabilitation of cold-water tenements and boarded-up buildings got the full benefit of ex-Mayor LaGuardia's well-known invective. In his column in the newspaper *PM*, LaGuardia charged that the tax exemption and tax abatement provided by the law would line the pockets of slum landlords, while the $16 a room rent limit would force tenants to pay dear for substandard housing.

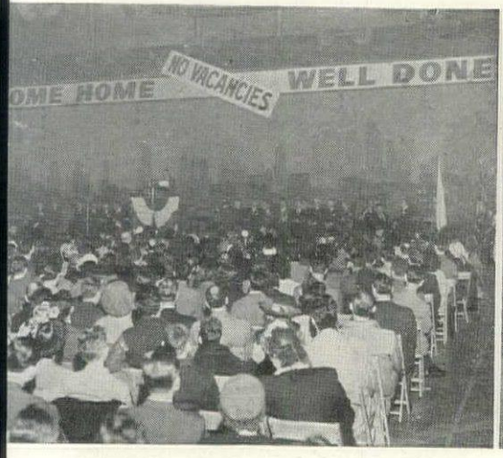
Housing veteran Nathan Straus was back in the fight. On Housing Day, Mayor O'Dwyer listened for an hour and a half to Straus' proposal that the city issue $3 million worth of bonds to finance the construction of 50,000 garden-type apartments to rent from $25-45. Straus, always a man with an eye to land costs, said he had already located 500 acres of outlying land that could be had at $1 a sq. ft. While the Mayor listened with promising attentiveness, 300 members of the Straus-headed Housing Action group paraded outside.

Observed the *N. Y. Post*: "Perhaps we have let our emergency housing needs slip so far into crisis that our only remedy is the immediate construction of low-cost homes by our housing authority."

Myron Ehrenberg photos



HOUSING DAY in New York brings parade at City Hall while Nathan Strauss discusses his plan for city-subsidized rental housing with Mayor O'Dwyer (above). American Legion held housing rally (below), where vets booed State Housing Commissioner Stichman (left, below) apparently because his emphasis on private enterprise sounded too much like business as usual and cheered Representative Wright Patman (right, below) whose emergency housing bill passed Congress last month.







LIGHT ON HOUSING SHORTAGE

Los Angeles finds better incomes mean families want more room.

In Los Angeles the regional planning commission put its finger on some of the facts from which housing crisis is made.

Los Angeles, which now can count 1,805,687 heads, has moved up from fifth to fourth place among U. S. cities. But, despite this population increase, there are now, on the average, no more persons per dwelling unit than in 1940.

On April 1, 1940 there were 3.05 persons per occupied dwelling unit in the city. On January 28, 1946 there were still exactly 3.05 persons per dwelling unit. Trailers, garages, other makeshift housing was not counted; if it had been, the ratio per dwelling unit would be even lower for 1946. The planners drew these conclusions:

- Families are consuming more space because they can afford it. Incomes have, on the average, increased more than 60 per cent during the war, while rents have been held close to prewar levels. Higher rents would have forced greater economy in use of available space.
- Landlords are favoring small families. With plenty of eager tenants to choose from, landlords often select single persons or childless couples.
- Prosperity and the wave of wartime marriages has increased the number of small families and thus expanded the per capita demand for housing. Full effect of this trend was not felt until the servicemen returned in large numbers.

LABOR

CLAY SEWER PIPE AHEAD

Strike settled after two months.

Since early February half of the nation's clay sewer pipe plants have been shut tight as a drum. Late in April the 73-day-long strike came to a negotiated end.

The United Brick and Clay Workers Union, which had asked a 30 cent hourly raise, settled for 18½ cents plus a 22 per cent hourly boost for incentive workers. Producers won a 15 per cent increase in OPA ceiling prices.

Yard stocks, manufacturers said, are at their lowest point in building history. It will be months before diversified stocks can be rebuilt and prompt shipment of carload orders can be expected. Meantime, top production priority will be given to clay products needed for veterans' housing.

BIG BILL RIDES HIGH

Carpenters blast federal restrictions.

Back of tight-closed doors (the press was barred) in the squat yellow stucco Carpenters' home in Lakeland, Fla., the Carpenters' Brotherhood got down to business. In the seven-day-long session of their 25th general convention, there was only the flicker of a sign that anybody was restive under Big Bill Hutcheson's heavy hand. When one rebellious delegate inquired, "I wonder if the general president is afraid of opposition in this convention", Big Bill's "Hell, no" was loud enough to wake the retired brothers dozing on the porch.



BOSS HUTCHESON

Hutcheson's firm grip was evident in the ousting of four delegates from Baltimore Local 101. The Baltimore insurgents accused Big Bill of "coercing and intimidating and bribing" certain witnesses to withhold testimony concerning an alleged $244,038.30 embezzlement from their treasury. Hutcheson told delegates that the national Brotherhood had obtained title to property valued at $233,500 from two former officials of the Baltimore local and had "made good about $244,000" to the local. With only a handful of dissenters, the Brotherhood then promptly voted to expel the dissatisfied Baltimore delegates on charges of disobedience to officers and of creating discord.

With Big Bill's re-election for another four-year term assured, the convention proceeded to:

- Denounce CPA's building restriction order. A Georgia delegate listed the vast armies, shipyards, factories built during the war, wound up: "Now, in the first few months of our reconversion period, we are told by a group of long-haired starry-eyed theorists in Washington that we can't build two or three million homes for veterans without stopping everything else."
- Recommend that the "OPA and all other such restrictive government agencies be abolished to the end that the American system of free enterprise shall prevail."
- Protest government subsidies for prefab housing.
- Recommend that the federal government and municipalities finance apartment house construction.

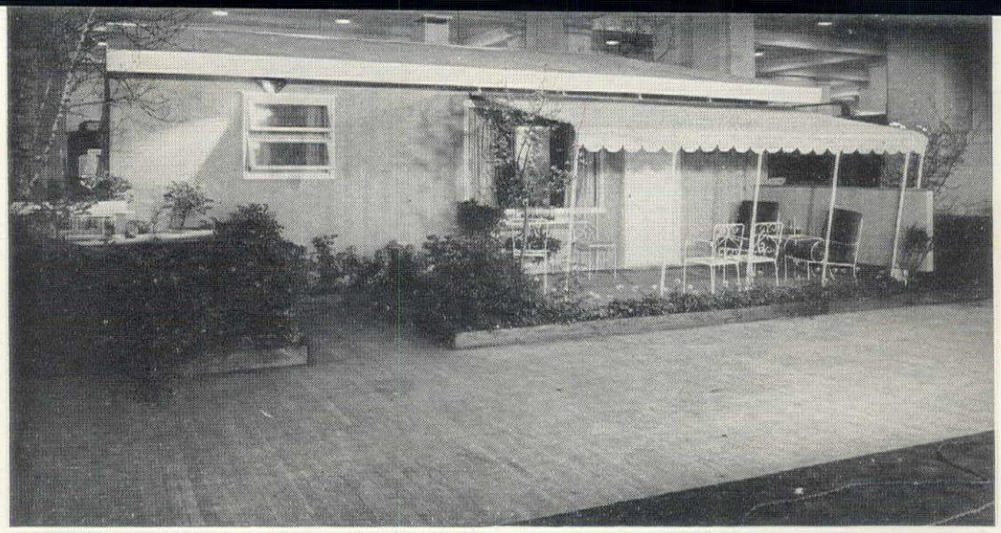
HOUSES

HOME SHOWS BOOM

Thousands vie for chance at models.

In answer to the nation's house hunger, Home Shows mushroomed over the U. S. Such exhibits were about as close as many an anxious customer would get to a new house this year.

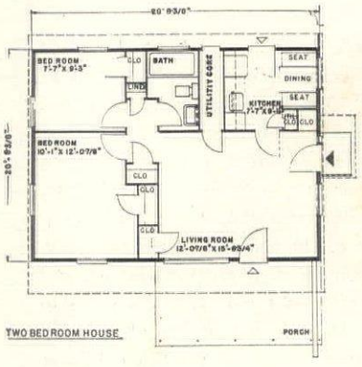
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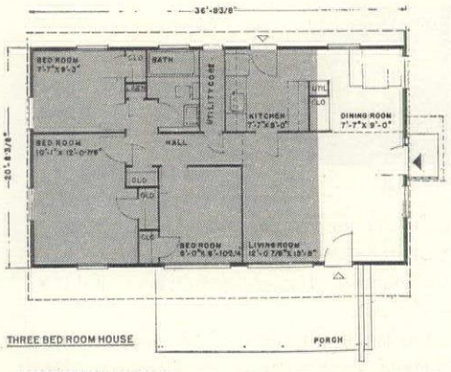


INDUSTRIAL DESIGNER Donald Deskey, who helped to design Ingersoll mechanical utility unit, went right on to design this low cost plywood-panel prefab around it. Full-size model (above) was featured at home show in New York's Grand Central Palace last month. Plywood panels have ridged surface, adaptable to various finishes.

SHELTER HOMES, INC., offers prefab built around mechanical core

Rudolph Edward Leppert, Jr., Photos





MINIMUM HOUSE plan (top cut and shaded area below) is easily expansible as family budget allows by shoving along right outer wall. All utilities are housed in 7½ x 2½ ft. unit between kitchen and bath.



LIVING-DINING AREA HAS SLOPING ROOF



AWNINGED TERRACE GIVES ADDED SIZE

SCALE MODEL shows simple, clean lines of Deskey prefab, which went on sale at Wanamakers' department store in New York last month. Factory price is quoted at $4,685. One East Coast plant is already in operation, and Deskey said that deliveries to veterans would begin by the end of June. Other manufacturers across the country will be licensed by Shelter Homes, Inc. to produce and distribute houses.



Photos: Wood Allen, Paul Peters



HOUSTON HOME SHOW featured model house (above) for which 2,000 veterans signed up as would-be purchasers



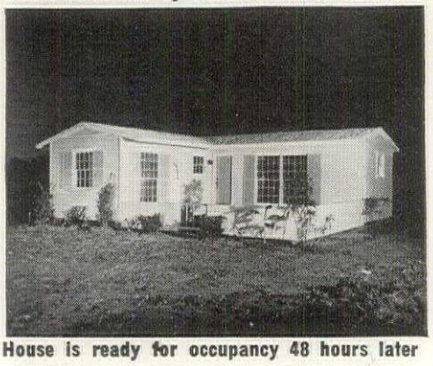
Winning vet family with architect T. H. Hewitt



Sharp construction crew starts to move house



House is moved by trailer truck to new site



House is ready for occupancy 48 hours later

In New York, a Grand Central Palace home show sponsored by the Metropolitan Real Estate Board provided a glittery debut for the low-cost prefab developed by industrial designer Donald Deskey. Now being produced by the Deskey-organized firm, Shelter Industries, Inc., the good-looking house (see p. 11) will sell for about $4,000.

In Indianapolis, hundreds queued up every morning at the fairground gates to await the 11 o'clock opening of a handsome show arranged by veteran exhibitor J. Frank Cantwell, who has been organizing home shows in the city for the last 24 years. The 125,000 who this year filed through the long rows of booths and lovingly eyed the model house set an all-time attendance record—the home show pulled more spectators than Indianapolis' famous auto races, held a week later.



Cantwell

For the first time, the Indianapolis show plugged contemporary architecture. Designed by young architects Leslie F. Ayres, James L. Kingsbury and Charles D. Ward, the show's model house featured an open plan, full-length solar walls in living and dining rooms, basementless construction with heating plant and laundry housed in a utility room. Built by realtors Bridges and Graves for the show, the model house will be moved to a permanent site in a new subdivision just opened by the firm.

In Houston, 2,000 veterans put their names down for a chance to buy the model house put up as the center of a home show in the Sam Houston Coliseum by the Frank W. Sharp Construction Co. When the buyer's name was drawn on the last night of the show, Sharp's crew packed up the house in two sections, loaded it on trucks, had it ready for occupancy on a permanent site within 48 hours (see cuts). The American General Investment Corp. made the buyer a G. I. loan to finance his $6,500 purchase.

CO-OPS FLOURISH ONCE MORE

Dubious apartment-buying in New York, ambitious building plans in Washington.

Housing lack was fathering a spate of housing cooperatives. These were of two kinds: tenants' groups formed to take over existing apartment properties and veterans' groups organized to start new building projects.

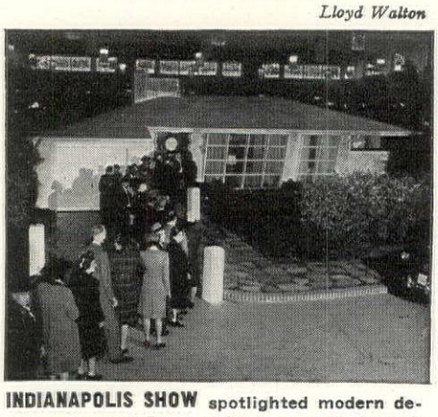
New York especially showed a multitude of apartment house cooperatives. Most of them had all the earmarks of a slick real estate deal—on the part of the ex-landlord. Sometimes threat of property sale and forced eviction was used to jell tenants into cooperative purchase. Sometimes landlords anxious to unload dubious properties at today's peak prices lured tenants into purchase by dangling attractive but usually misleading figures of tax advantages. Occasionally the deals were instigated by the tenants themselves and were, presumably, profitable to all parties concerned.

In Washington, D. C. the Veterans Cooperative Housing Association, after considerable pressure, finally won the right to purchase Naylor Gardens, a $5,125,000 project built by the Defense Homes Corp. The cooperative will pay 10 per cent down and the balance over a 37 year period, with interest at 3 per cent. Purchase terms require that present tenants who do not wish to participate in the purchase shall be permitted to continue in occupancy under existing leases, and that rents shall not be increased for a period to be mutually agreed upon.

Of the dozens of cooperatives formed to undertake new housebuilding projects, one of the most ambitious was also in Washington, D. C. Some 250 government and professional workers had formed the Group Housing Cooperative, which purchased the 124-acre Bannockburn Country Club for $193,000. The cooperative planned a 500-to-700 unit family housing development with building types to range from the single-family house to small apartment buildings. So far no architect has been chosen. Each member will pay a down payment of not more than 20 per cent of house cost by the time he moves in, make regular monthly payments to the cooperative for maintenance, taxes, interest, reserve fund.

(Continued on page 16)

Lloyd Walton

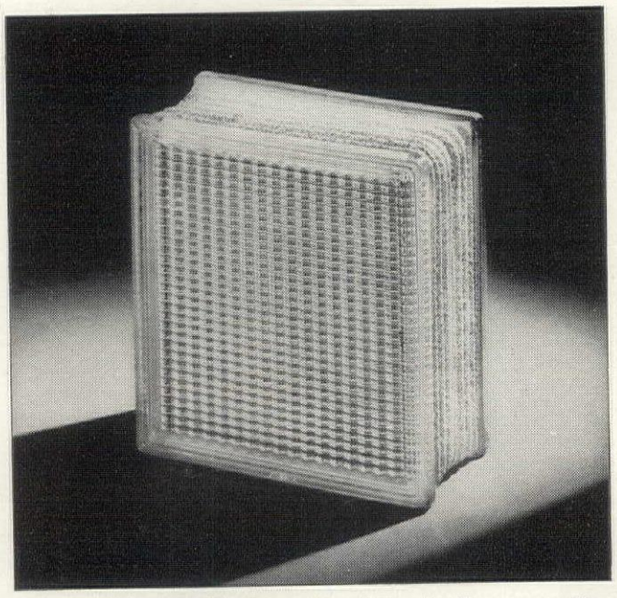


INDIANAPOLIS SHOW spotlighted modern design. Some 125,000 visitors passed through model house by Ayres, Kingsbury and Ward.



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Softly diffused daylight pours through panels of Insulux Glass Block into this plant cafeteria, operated by a large manufacturer of paper boxes. Meals are more appetizing in this room where natural daylight enhances a skillfully executed color scheme. Light is directed to the ceiling, then evenly diffused to all parts of the room. Infiltration of dust and dirt is decreased. Upkeep is low—Insulux does not require painting. Important wherever food is served, Insulux is easy to clean and keep clean.



For technical data, specifications and installation details, see our section in Sweet's Architectural Catalog, or write Dept. C-18, Owens-Illinois Glass Company, Insulux Products Division, Toledo 1, Ohio.

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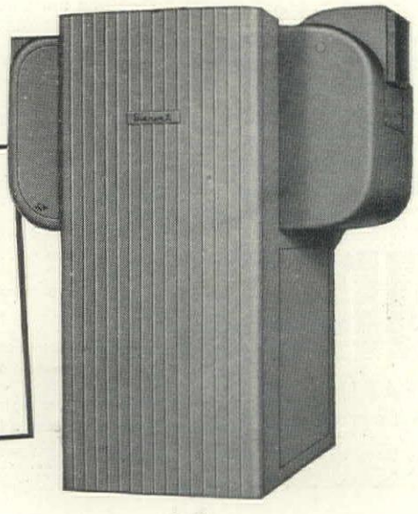
"No matter what other new developments in homebuilding are perfected in the next ten or twenty years, the home with Servel *All-Year* Gas Air Conditioning will remain up-to-date and have a higher re-sale value." This is the opinion of leading mortgage loan officers all over the country.

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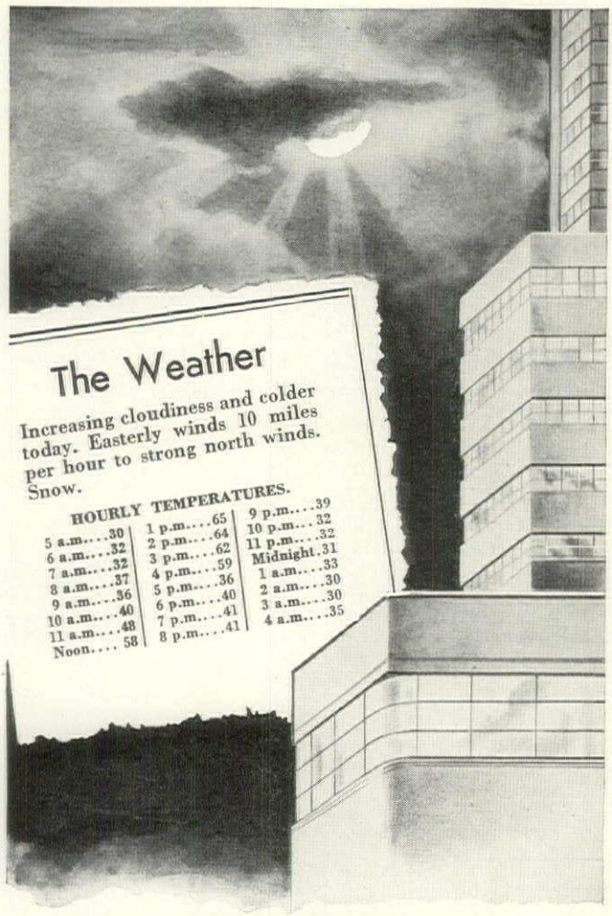
For full details of the prestige-building advantages of Servel *All-Year* Gas Air Conditioning, get in touch with your local Gas Company, or write direct to Servel, Inc., 2606 Morton Ave., Evansville 20, Indiana.

This Better Homes and Gardens Five-Star home, No. 1602, was designed by Atlee B. and Robert M. Ayres, architects, of San Antonio, Texas. This is one of the homes in Better Homes and Gardens "Exhibit of Homes for Today."



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MARKET

HOUSING IS GETTING BETTER

Census Bureau report points to improvement in available housing.

Although it isn't nearly enough to go around, the nation's supply of housing is in better shape than had been generally supposed. That much was clear from a Census Bureau report released last month —first housing check-up since 1940. More U. S. houses now have bathtubs, electric lights, radios than ever before. As compared with 18 per cent considered in need of major repairs in 1940, only 11 per cent of all housing units are now classed as needing major repairs.

The rather surprising improvement in U. S. housing—made despite war curtailment of normal building and repair—reflects the big rise in incomes. Many a rural slum, many a tenement cold-water flat stood vacant as families moved to the kind of housing they could afford for the first time.

There are now 37,600,000 occupied dwelling units in the U. S., about 2¾ million more than in 1940. There are some 3 million more urban houses than in 1940, but the number of rural-farm occupied dwelling units has dropped by nearly 800,000. Biggest improvement in housing quality has, however, come in rural areas.

Biggest change in the character of the national housing supply is the big increase in home ownership. In November, 1945 there were 20,009,000 dwelling units occupied by owners as compared with the 15,196,000 owner-occupied homes in 1940.

To the chronically suspicious National Association of Real Estate Boards the Census report added up to one more token of bureaucratic duplicity. "For months," said NAREB tartly, "government housing experts, including Mr. Chester Bowles, have been beating their breasts about the terrible condition of housing in this country. They have showered us with statistics, attempting to show that we have a nation of dilapidated structures under private enterprise, and that the condition of our housing is deplorable. Their sole purpose has been to obtain further government participation in housing."

COAL VALLEYS BOOM

Miners are becoming home owners.

Strike news, flaring in the soft coal fields last month, lit up a new real estate trend. Miners are becoming home owners at a rate fast enough to set off a major real estate boom in the Appalachian area. The boom centers around a special type of property—a house plus a few acres for a truck farm.

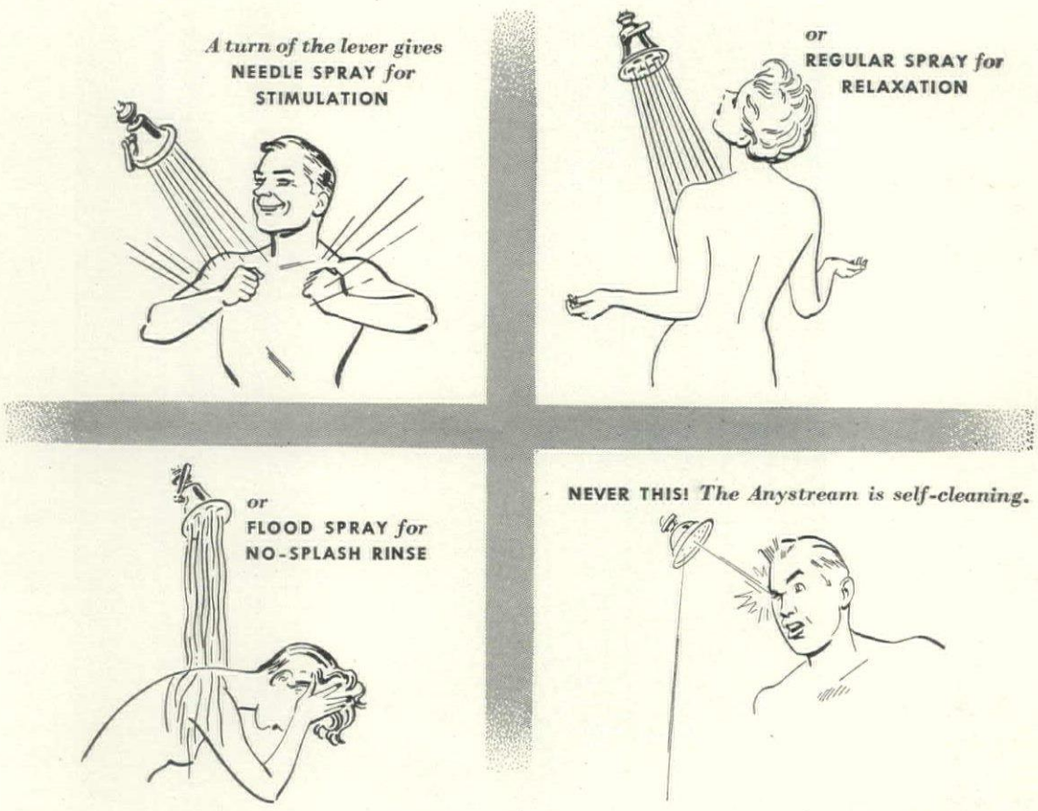
The miners had had a good year—average wages were $2,895. With the help of burly John L. Lewis they expected things to get even better. Two out of every three had become home owners.

The trend toward home ownership has meant the disappearance of old time "company towns." The shanty rows next to the slag heaps are rapidly vanishing from the U. S. scene. The mining companies themselves had long complained that operation of company housing is not profitable.

(Continued on page 20)

STATE OF THE NATION'S HOUSING

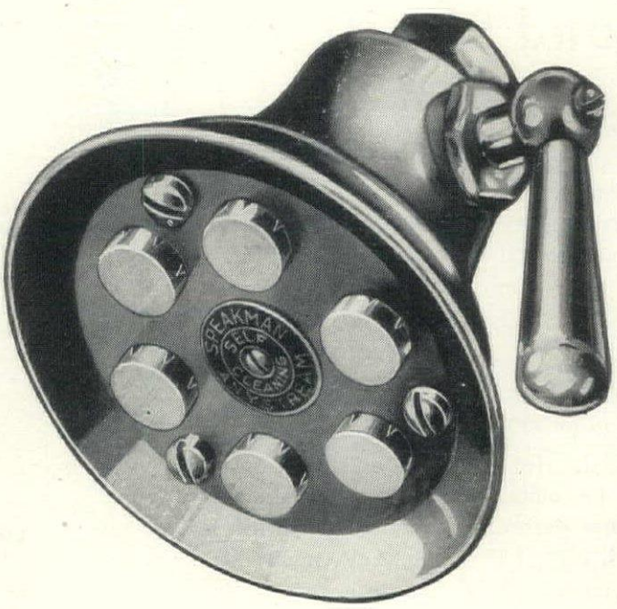
	ESTIMATED NUMBER		INCREASE, 1940 TO 1945		PER CENT	
	1945	1940	Number	Per cent	1945	1940
Total occupied dwelling units	37,600,000	34,855,000	2,745,000	7.9	100.0	100.0
Dwelling units not needing major repairs	33,258,000	28,588,000	4,670,000	16.3	88.5	82.0
Dwelling units needing major repairs	4,342,000	6,267,000	—1,925,000	—30.7	11.5	18.0
With private bath and private flush toilet	24,385,000	19,429,000	4,956,000	25.5	64.9	55.7
With private flush toilet, no private bath	1,536,000	1,487,000	49,000	3.3	4.1	4.3
With running water, no private flush toilet	3,622,000	3,614,000	8,000	0.2	9.6	10.5
No running water in dwelling unit	8,057,000	10,325,000	—2,268,000	—22.0	21.4	29.6
With central heating	18,188,000	14,639,000	3,549,000	24.2	48.4	42.0
Without central heating	19,412,000	20,216,000	—804,000	—4.0	51.6	58.0
With electric lighting	33,356,000	27,604,000	5,752,000	20.8	88.7	79.2
Without electric lighting	4,244,000	7,251,000	—3,007,000	—41.5	11.3	20.8
With radio	33,998,000	28,847,000	5,151,000	17.9	90.4	82.8
No radio	3,602,000	6,088,000	—2,406,000	—40.8	9.6	17.2



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- No other shower head provides the many features of the Speakman Anystream.
- The Anystream is really three showers in one, the type of spray being adjustable instantly by the user, as shown in the sketches above.
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- The Anystream delivers 48 individual jets of water all of which adjust simultaneously with a turn of the lever.
- The Anystream is easy to install and is designed to harmonize with all modern bathrooms.
- The Anystream is precision-made for long wear and low maintenance.
- And when the plungers are extended (in open position) after use, the shower head is immediately drained, eliminating that annoying after-drip.

See Sweet's Architectural File for a condensed Speakman catalog, or write for further information.

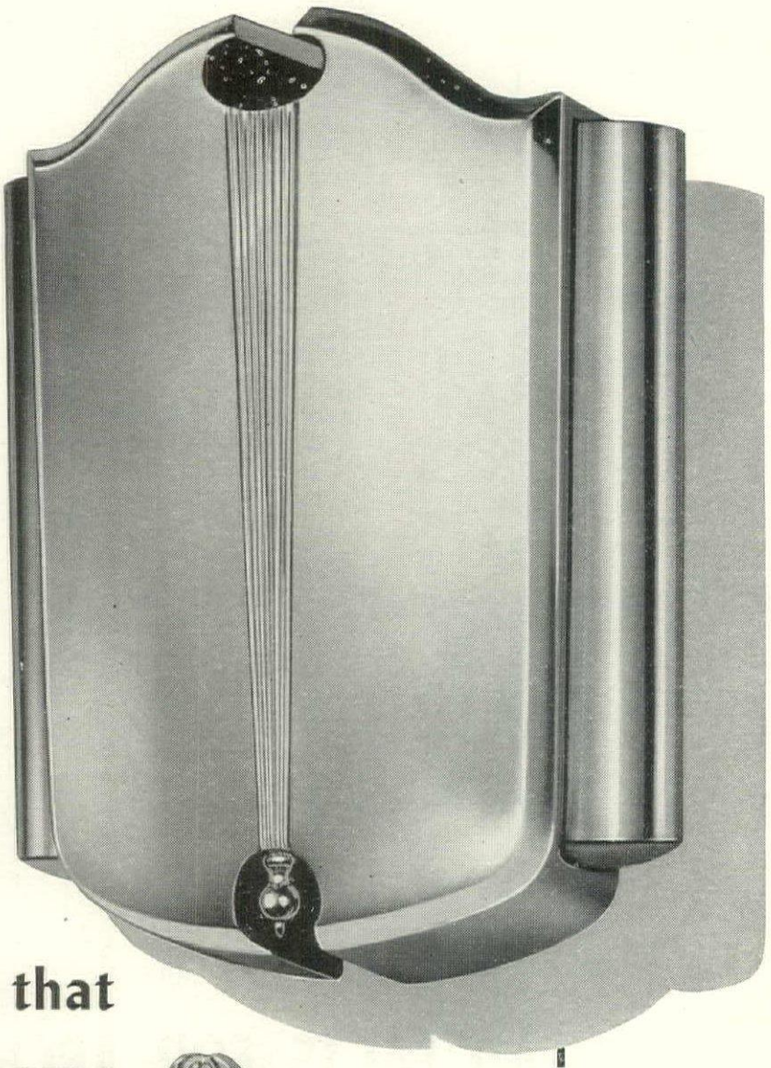


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A NuTone Jewel on the wall is added proof of careful planning . . . for better living means better *listening,* too! Women will like the looks of this stunning new chime . . . they'll love its tone . . . and they'll appreciate your consideration for their comfort in recommending it.

An all-brass Colonial chime—with a touch of the modern. Sounds two tones for front door—one for rear. The NuTone Jewel, with matching push buttons included, lists at $9.95.

Write, today, for details. Address your nearest NuTone office. NuTone, Incorporated, Merchandise Mart, Chicago 54; 200 Fifth Ave., New York 10; 931 E. 31st St., Los Angeles 11; or Terminal Sales Bldg., Seattle 1.



Packed with Jewel Push Button in matching style and finish.



NEW POWER UNIT—self-contained, completely sealed against dust, and easy to remove while chime remains on wall.



BUILT TO LAST—test power unit has been operated 392,000 times—almost 180 years of average six-time-a-day home use!



"FRONT" PUSH BUTTON TO MATCH—identical with door chime design. All-brass plate is rustproof for outdoor mounting.



LOVELY TO LOOK AT—satin brass cover with polished, high-lighted border blends well with almost any interior decoration.



RELIABLE—made of the finest, *safety-proved* materials. Listed under re-examination service of Underwriters' Laboratories.



EASY TO INSTALL—a screwdriver job that's done in a jiffy if chime outlet is included in general wiring scheme.

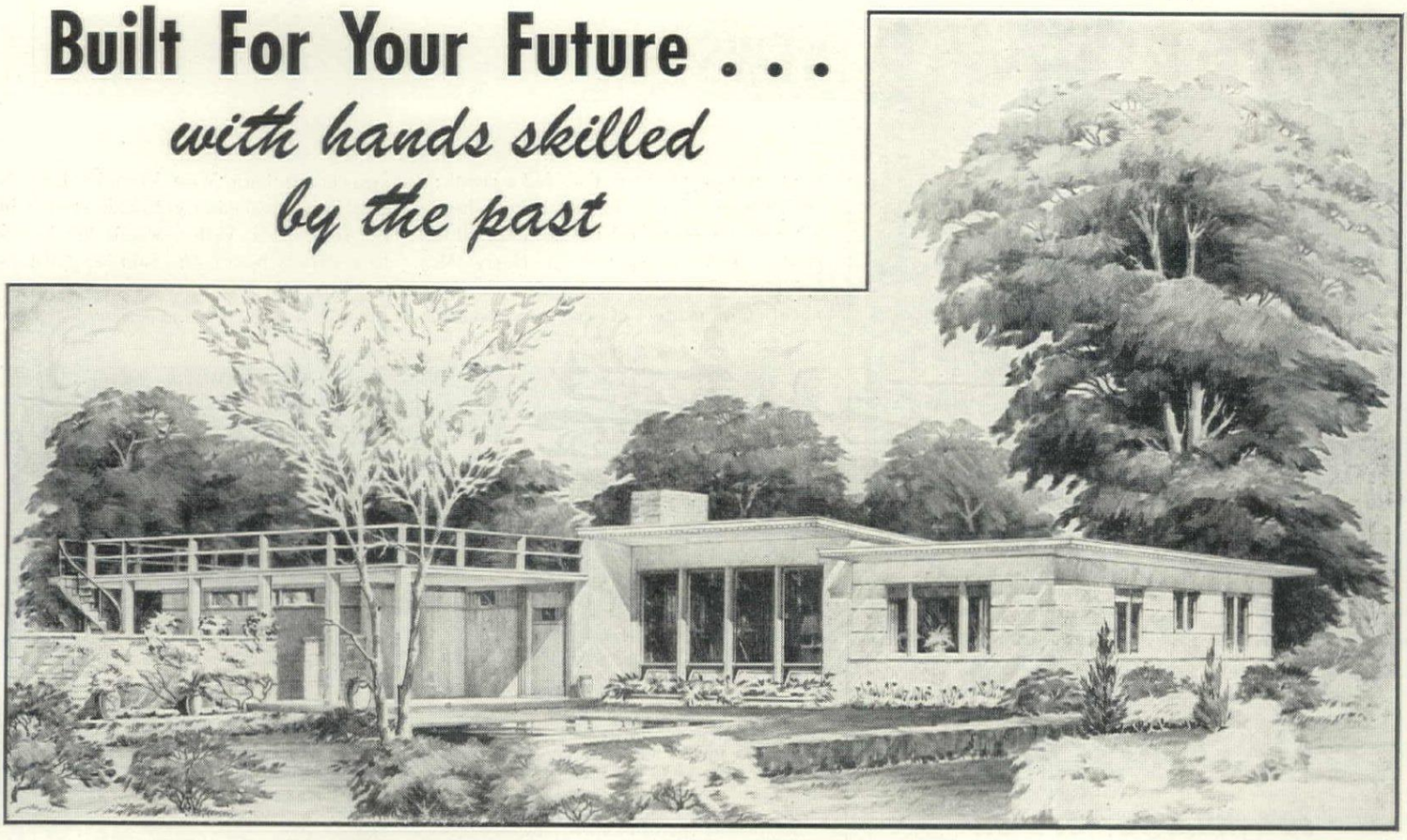
...better living means better listening, too!

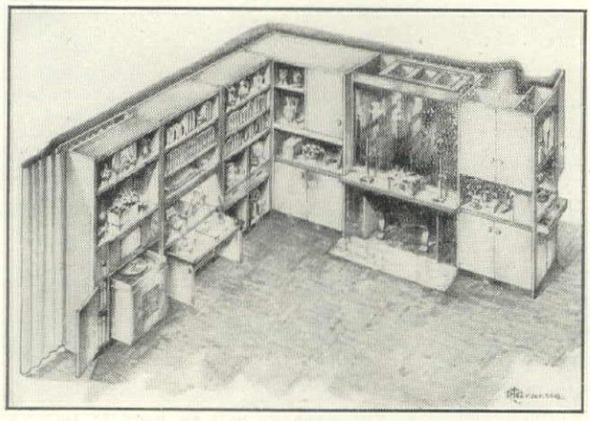
NUTONE TRADE MARK

WORLD'S LARGEST MAKER OF DOOR CHIMES

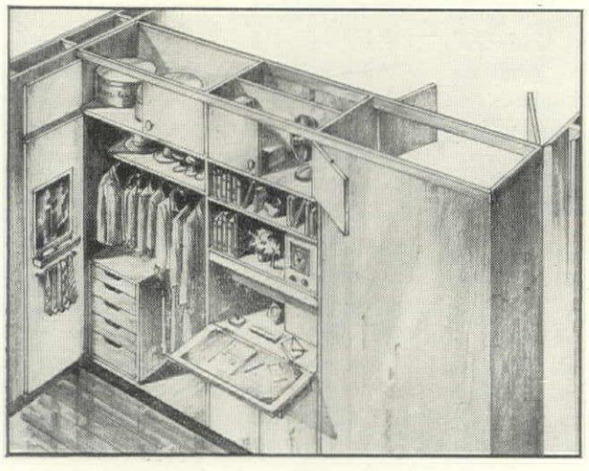
Built For Your Future . . .

with hands skilled by the past





Defoe's "Working Walls" are distinctly a modern innovation. They put between-room wall space to work for the housewife and provide more storage while actually saving room space.*



IT TAKES a lot of time and work to transform thought into reality. Things like the new Defoe Homes don't just happen. Back of them are the skill and experience born of more than forty years of painstaking workmanship under the exacting traditions of the shipbuilder's art.

• • For more than four decades everything Defoe has produced has been built to perform perfectly—and built to last! What the Defoe organization has learned in all those years has now been translated into the comfort, the convenience, and the economies of the new Defoe Homes. They will be a definite contribution to the better things for better living in the good times which lie just ahead.

*TRADE NAME REGISTERED

Defoe HOMES

HOUSING DIVISION
DEFOE SHIPBUILDING COMPANY Dept. AF-6
BAY CITY, MICHIGAN

Please send me the descriptive brochure on the new Defoe Homes.

*Name*_____

*Street*_____

*City and State*_____



MINWAX
COLORLESS WATERPROOFING
and
"WEATHERCAP"
specified for use on
NEW YORK PUBLIC LIBRARY

ONE of the largest and most interesting recent renovation projects in New York City is that of the famous New York Public Library, shown above as the work neared completion. Specifications for the work were prepared by Aymar Embury II, Architect; the actual cleaning, restoration and waterproofing were done by Standard Waterproofing Corp.

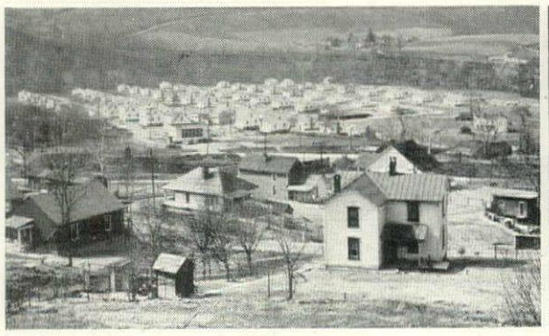
MINWAX "WEATHERCAP", a pure lead preformed cover strip set in MINWAX CAULKING COMPOUND, was specified for use in "all the upper horizontal or slightly pitched stone joints of cornices, gables, watertables, etc., and top rails of all balustrades." After the stone work had been cleaned, the entire building was treated with two coats of MINWAX COLORLESS WATERPROOFING.

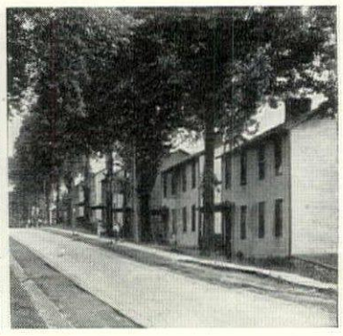
Complete information about these and other MINWAX products for waterproofing, dampproofing and wood finishing will be found in Sweet's. Inquiries on special problems will receive prompt attention. Address correspondence to MINWAX Co., Inc., 11 West 42nd Street, New York 18, N. Y.

COMPLETE CATALOGS IN SWEET'S

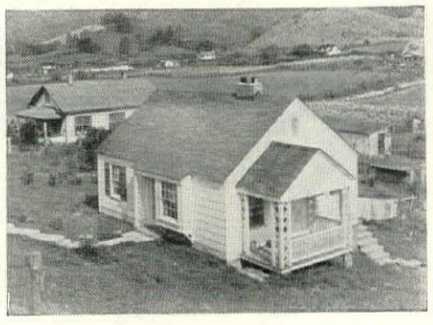
TRADE MINWAX MARK
WOOD FINISHES
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OTHER MINWAX PRODUCTS
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Rents average not more than $12 a month; company-owned housing has always been a target for social reformers. Said Bituminous Institute spokesman Harry M. Vawter: "There is much misconception about this matter of company houses. Mining companies have no desire to be landlords. It is a situation forced on them years ago in order to meet the needs of the country for coal."





COMPANY HOUSING (above, r.) is being sold to miners anxious to become home owners, while one mining company has started new housing developments for sale to miners (above, l.). Sample of house built by realtor J. H. Lilly and sold to miners with 1-5 acre truck farm is shown at lower left.



Where company-owned housing is fairly modern and well-maintained, occupants are ready customers. One by one the big operators have been hanging "For Sale" signs on such properties. The U. S. Coal and Coke Co. and the H. C. Frick Coke Co., subsidiaries of U. S. Steel, have sold 1,000 homes directly to the occupants, disposed of many others to real estate operators. The Industrial Collieries Corp., a Bethlehem Steel holding, has offered all houses in the towns of Ellsworth, Cokeberg and Marianna, Pa. for sale to employes at prices at about $1,500. Over 1,000 of these houses have been sold, most of them at a 10 per cent discount for cash. The Pittsburgh Consolidation Coal Co., largest independent bituminous producer in the country, has sold 2,000 duplexes.



LILLY

The miners' new ability to own their own homes is also putting the coal companies into the operative housebuilding business. The Hillman Coal and Coke Co., which owns 11 mines in western Pennsylvania, is building new developments for direct sale to employes.

The real estate boom has meant brisk business for independent developers like West Virginia's No. 1 realtor, J. H. Lilly, founder of the 38-year-old Lilly Land Co. Operating in the Poccohontas Coal Co. area in southern West Virginia, Lilly is now busy developing a 15-mile stretch in the rural Abbs Valley, where 400 homes have already been built. Said he: "Miners are becoming home owners at a rate unprecedented in our experience." Lilly offers a modest frame house (see cut) and several acres of land at prices ranging from $1,500 to $5,000 on a 5 per cent down, easy-payment plan.

MATERIAL

CRACKDOWN

FBI methods will be used to uncover operators in lumber black market.

The big truck loomed up out of the dark at 3 a. m. The smaller truck was waiting, parked without lights on a Dallas side street. Three men climbed out to transfer the new pine 2 x 4's. Lumber was on its way to the black market. The price: $165 per 1,000 ft.

All over the U. S. this scene was being repeated, with variations in price. There was also a booming black market in plumbing fixtures, there was upgrading and illegal pricing in bricks—but lumber was the blackest spot in the whole black building materials picture (see below).

Last month the OPA enlisted FBI help, enlarged its own enforcement staff, got ready to push the lumber-running trucks off the roads. OPA will go after the big violators, put them out of business with stiff fines and probably criminal charges. En-

(Continued on page 24)

This illustrated book shows the many and varied uses of PC Glass Blocks in building construction. See how you can help clients to improve working conditions with this unique building material and also to save their money.



Free!

TO ARCHITECTS

Now, under one cover, you can get all the information you need to reap the full advantages of PC Glass Block construction.

In this 36-page book, illustrated in three colors, there are photographs of all sorts of PC Glass Block installations in a wide variety of buildings. The properties, characteristics and functions of the various types of block are described, the patterns illustrated, the sizes listed.

The technical data section includes authoritative information on light transmission, insulation, (which promotes control of condensation) weather resistance, structural strength, ease of cleaning and maintenance, exclusion of dust and grit, dampening of distracting noise. Layout tables and detailed drawings of typical PC Glass Block installations are supplemented by detailed specifications for panels and for panel and sash combinations.

No other building material can give your clients all the advantages they get with PC Glass Blocks. In many ways they promote appearance and efficiency, yet also effect worthwhile economies.

Start now to prepare for the construction and remodeling jobs which are still in the pre-planning stage. Get all the information you need, satisfy yourself that you can recommend PC Glass Blocks to your most exacting clientele with full assurance of satisfactory service.

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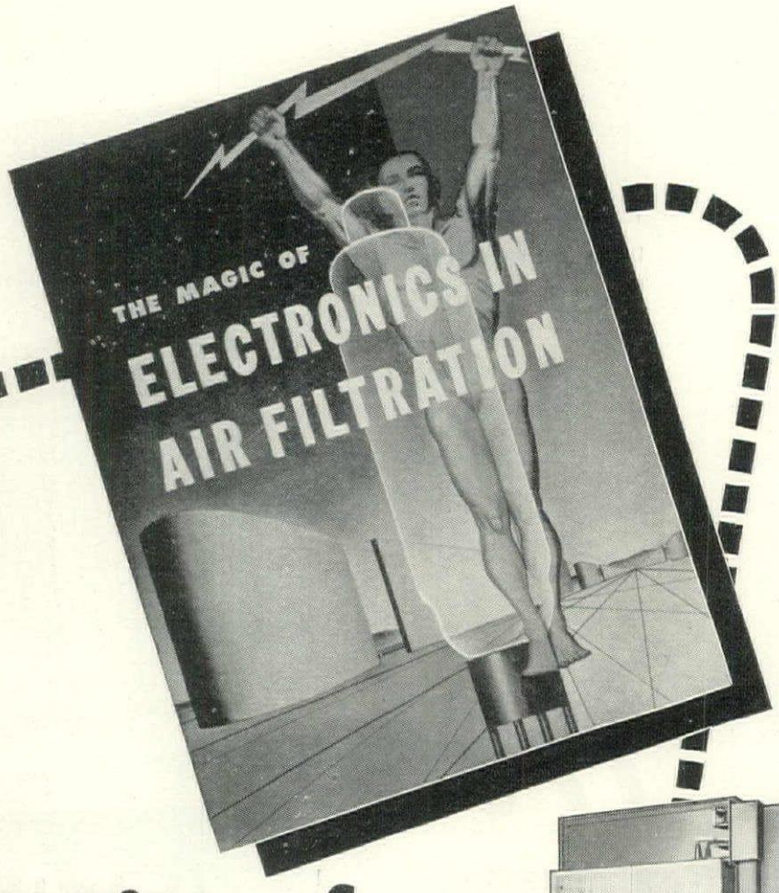
Please send along my free copy of your new book, on the use of PC Glass Blocks for Commercial, Institutional and Public Buildings. It is understood that I incur no obligation.

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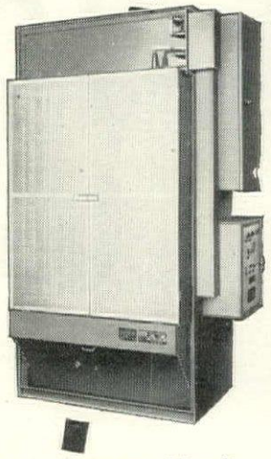
Here's Your Answer!



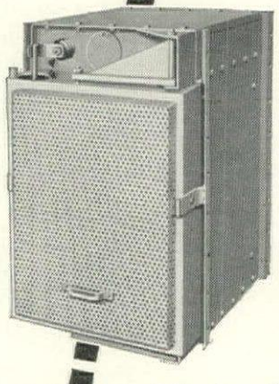
to the practical application of *Electronic* DUST CONTROL

The control of dust, smoke, soot, bacteria, pollen, mold spores—in fact any airborne particles down to 1/100,000 of an inch in diameter—is made possible by AAF Electronic Precipitation.
Three completely different types of Electronic Filters are available to meet every industrial or commercial air cleaning problem. The interesting story behind the development of these filters, which are the result of 10 years of research, is told in the booklet shown here. Send for your copy today.

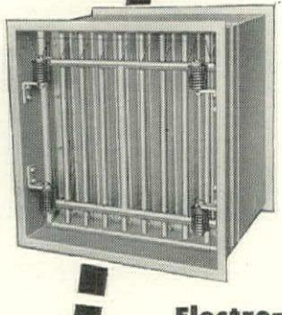
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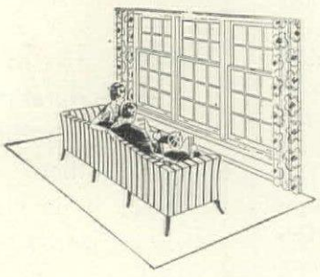
AAF *Electronic* PRECIPITATORS

how to relieve that cramped feeling

A house may be small—but it needn't be "cramped." Even when floor area is limited, there's a way to create an illusion of greater space—of more freedom—within the house.

The answer, of course, is windows. Bay windows. Corner windows. Groups of windows. Cost? Quite moderate—if you specify stock window designs of Ponderosa Pine!

"Today's Idea House"—Ponderosa Pine's 32-page idea book—is filled with suggestions on reaching happy solutions with stock doors and windows of Ponderosa Pine. You'll want a copy of this book for ready reference—and the coupon will bring it to you without cost or obligation.



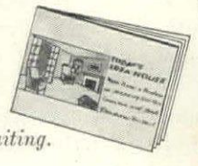


As shown in this charming room, stock design windows of Ponderosa Pine are truly modern, with streamlined styling which gives them lightness and grace. Remember, too, that Ponderosa Pine windows hold paint well . . . are not subject to rust or corrosion.

The Best is Yours with...

Ponderosa Pine
WOODWORK

"Today's Idea House" treats doors and windows functionally—in terms of what they can do to make living more convenient and more comfortable. Send today for this booklet—your copy is waiting.

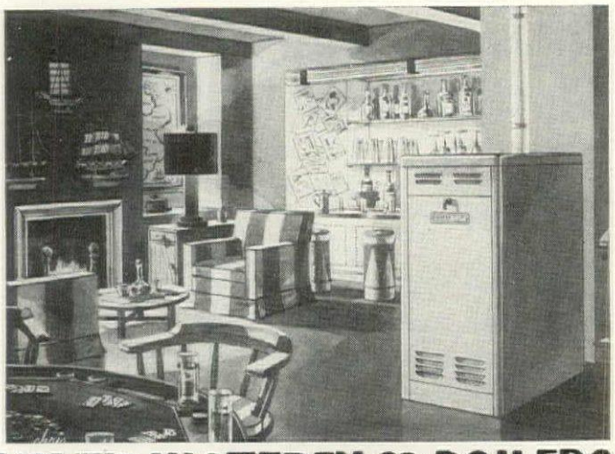


Ponderosa Pine Woodwork
Dept. OAF-6, 111 West Washington St.
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Please send me a free copy of "Today's Idea House."

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KOVEN WATERFILM BOILERS

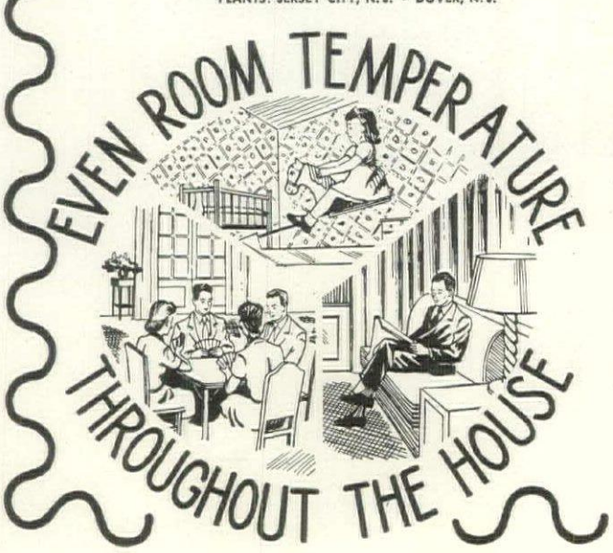
• economical
• quick heat

An essential item in every heating unit is economical heating comfort. The attractively jacketed KOVEN WATERFILM BOILER incorporates every principle of engineering and design to give maximum, uniform heat.

The patented construction of these fastest steaming boilers on the market utilizes all the modern scientific improvements that provide trouble free, long life operation. The KOVEN WATERFILM BOILER, made for automatic firing with oil, stoker or gas, assures you of quick, abundant heat, even room temperature and a plentiful supply of hot water at all times.

WATERFILM BOILERS are available in a variety of models suitable for large or small homes, apartment houses and industrial plants. Write to KOVEN for more detailed information.

WATERFILM BOILERS, Inc.
154 OGDEN AVENUE, JERSEY CITY 7, N. J.
PLANTS: JERSEY CITY, N. J. • DOVER, N. J.



forcement spotlight will be fixed on the production level. Large lumber transactions which suddenly drop out of sight in the regular channels of distribution will, OPA thinks, lead straight to the big-time black marketeers.

LUMBERMEN'S MISERIES

Industry tells Senate its troubles.

Production of lumber is still dropping and —unless the Office of Price Administration changes its ways—will continue to do so. In these plain words National Lumber Manufacturers Association chief Richard A. Colgan warned the Senate that something must be done about lumbermen's woes. The lumbermen hope that the Senators will give OPA some orders to this effect when they renew the Price Control Act.

According to Colgan, a veteran lumberman himself, the industry now has enough miseries to make Job look like a happy man. Some of them:

- OPA's "bulk-line" theory, under which price ceilings are set to permit only 75 per cent of the industry to break even. "This unholy policy is based in part on the absurd contention that 25 per cent of production never did make a profit and never will."
- OPA's use of over-all profits on many different types of operations to color decisions on price ceilings for one operation.
- OPA's refusal to recognize the current market value of raw material. "The price of stumpage has been mounting steadily through the war until it is two, three or even ten times its prewar price. In many areas this price is set by the government through its timber sales."
- OPA's "utterly inexcusable slowness in making decisions in critical price emergencies."

The OPA strait-jacket, Colgan said, means that manufacturers are forced to sell green lumber of unwanted sizes—because under ceilings they cannot afford to dry and cut lumber to proper size. Dealers must then have the work done at custom plants and at custom prices, thus raising the cost to the consumer by much more than a moderate ceiling increase at the manufacturing level.

Other hair-raising samples of price malpractices: Low-priced houses are being built with $24 doors. Cheaper doors are not being made, Colgan said, because OPA refused a $1 increase of the $5 ceiling price. Windows are being shipped unglazed because OPA refused a 6 cent ceiling increase; glazing on the job costs $2 or $3 apiece.

"Personally," said lumberman Colgan, "I get awfully, awfully bitter . . ."

(Continued on page 28)

April Showers

FULLY AUTOMATIC EVAPORATIVE ROOF COOLING

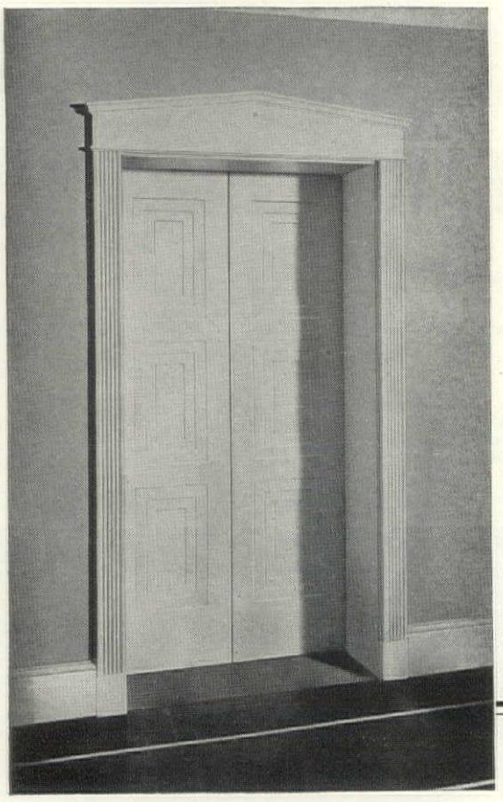
Evaporative roof cooling is the **natural** method of cooling factory, shop, and office buildings. There is no clamminess, no excessive cold, but a uniformly cool temperature throughout the plant—as refreshing as a summer rain. APRIL SHOWERS ends heat-fatigue, improves employee morale, and increases work output.

APRIL SHOWERS is performing for satisfied owners from coast to coast on ALL kinds of roofs.

Write us today for the answer to your industrial summer heat problem.

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CURE *for* *Claustrophobia*



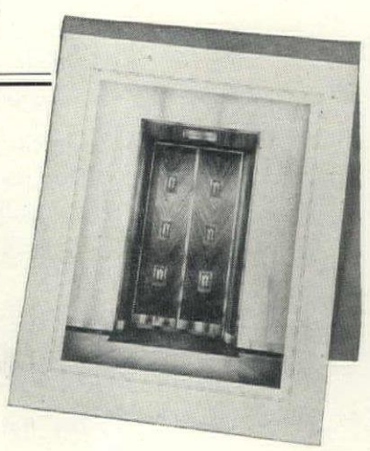
★ Fears and Phobias can build up fast inside a hospital's walls. Medical science—long ago—found that Beauty could be an aid in curing a lot of ills that otherwise might slow recovery.

The clean, crisp beauty of this Dahlstrom Elevator Entrance shows strikingly how the thinking of two professions can be combined. It is another example too, of how Dahlstrom cooperates with architects to combine beauty of design with practical necessity.

This Dahlstrom service is not new. It was maintained throughout the war years and long, long before. It is offered with renewed ardor today. In concrete form, it consists of full-color designs worked up from your sketches or specifications. When you have an elevator entrance problem, bring it to headquarters—DAHLSTROM.

Illustrated above: Dahlström Elevator Entrance in the West Baltimore General Hospital, Baltimore, Md. Henry Powell Hopkins, Architect. White enamel doors with offset panels.

Illustrated at right: A typical example of Dahlstrom cooperation with Architects and Designers—reproduction of a full-color sketch as it is submitted.



DAHLSTROM

METALLIC DOOR COMPANY, JAMESTOWN, N. Y.

Branch Offices:

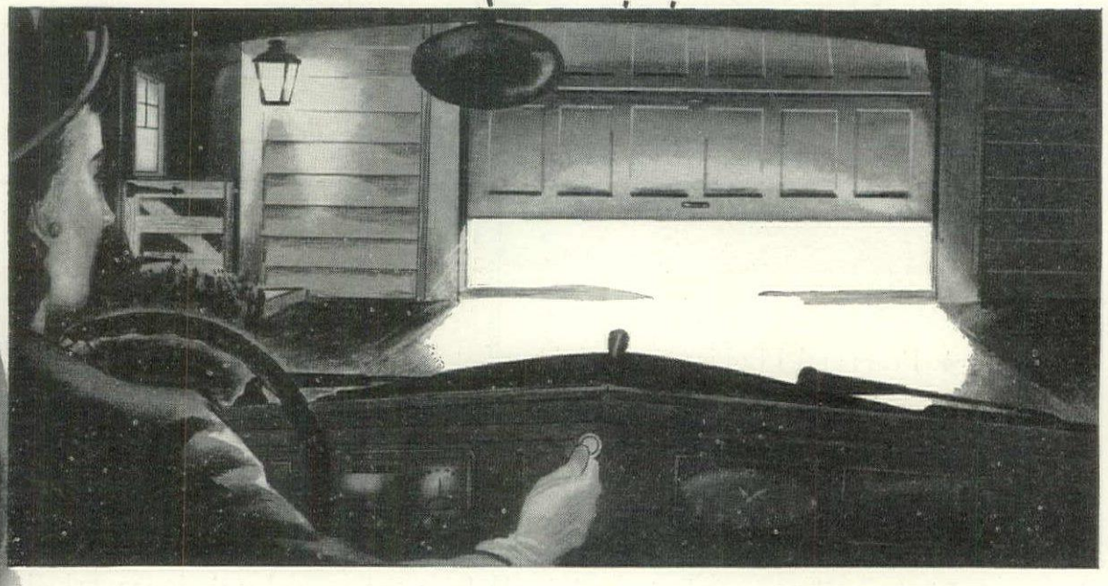
NEW YORK, CHICAGO, PHILADELPHIA, BOSTON, CLEVELAND, BUFFALO, ATLANTA, SAN FRANCISCO

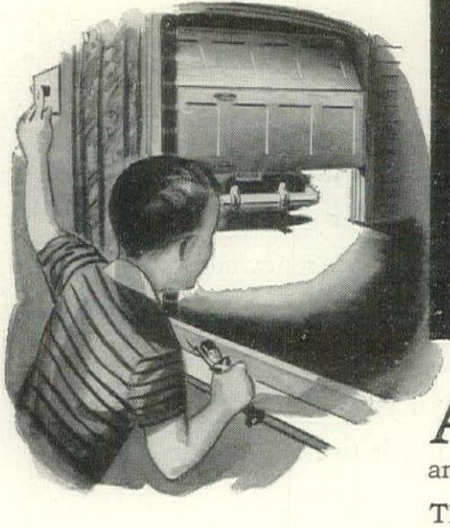
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A MODERN TOUCH TO THE MODERN HOME

A valuable safety feature, too . . . .





AN ULTRA-MODERN convenience can be designed into the homes with an Avco "Private Doorman." On duty 24 hours a day, it opens and closes garage doors—turns garage and house entrance lights on and off *automatically*.

This efficient electronic device is a "watchman," too. It erases the worry of putting away a car at night. The lighted driveway and doorway make driving into the garage a safe, easy matter—and you have lighted protection from the time you leave your car until you enter your home.

The Avco Automatic Door Operator can operate *any* type of standard garage door. A touch of a button inside a car and door opens, lights go on. Press another button inside the garage or house, garage door closes and locks, lights go out like magic.

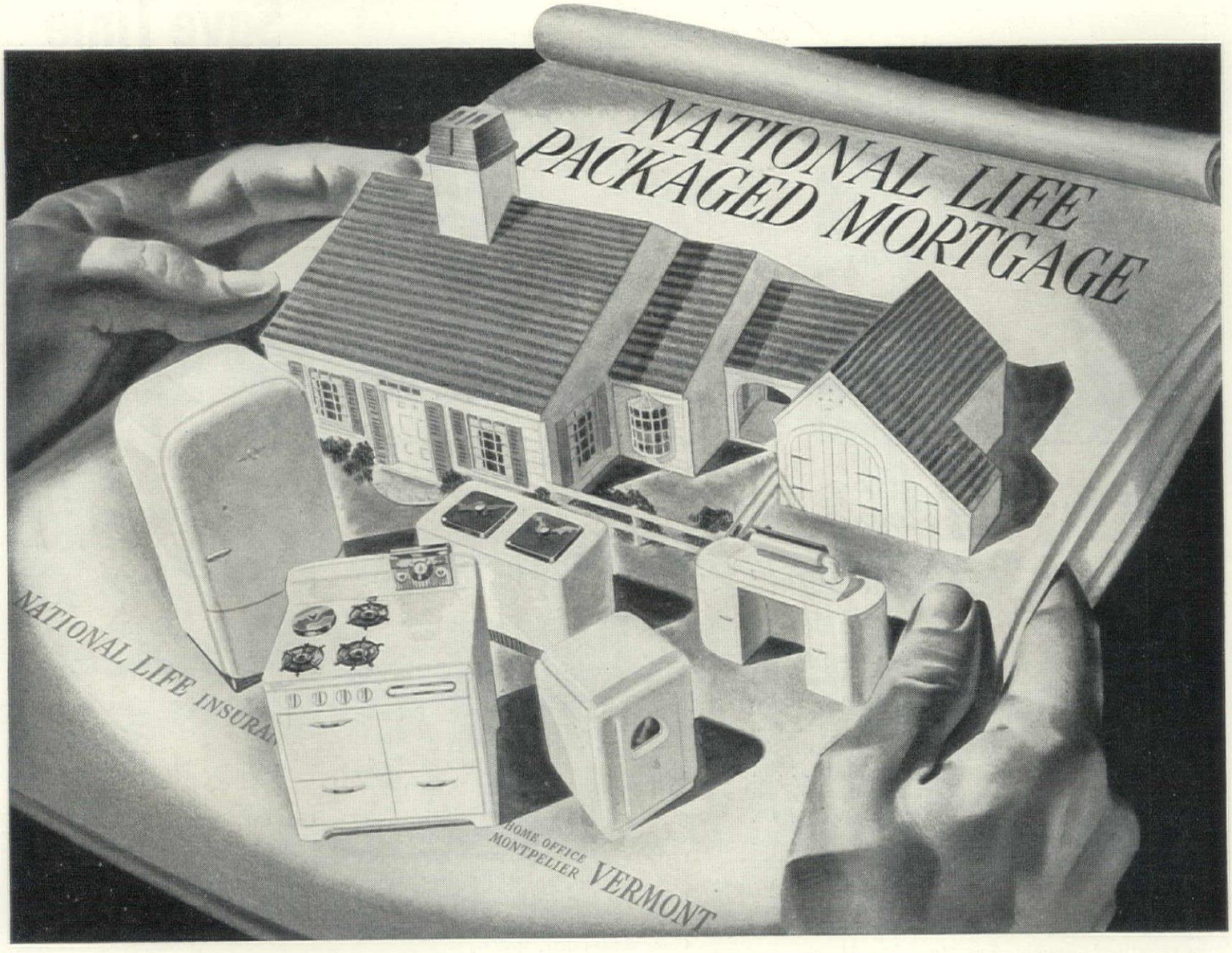
Quickly and easily installed, the Avco Automatic "Doorman" is guaranteed to give care-free service for years. Cost, including automatic light control, is nominal and it operates for only a few cents a month. For full information about this modern home feature, write or wire for the name of your distributor, today.



AVCO *Automatic* DOOR OPERATOR

The Horton Manufacturing, Division—The Aviation Corporation, Dept. A4—Circleville, Ohio

The Spotlight's on this *New Home-Owning Plan*



Here at last—the modern financing plan for modern homes! National Life's "Packaged Mortgage" is a wonderful new aid for architects and builders . . . a real boon to today's home-buyers—saves time . . . trouble . . . money. This unique plan classes all major household appliances as real estate. Ranges, refrigerators, home freezers, dish-washing machines, garbage-disposing sinks, home laundry equipment—all come under one convenient mortgage contract, along with house and land.

Look at the advantages to your clients: they deal with only one lender—that means only one item on their monthly budgets to cover all these purchases. Rates are lower than with conventional installment buying. Uniform payments are spread out evenly over the life of the loan—no extra big bills at the start. No wonder builders and buyers are so enthusiastic about National Life's "Packaged Mortgage"!

Get the facts on National Life's "Packaged Mortgage" now. See how this new, all-inclusive low-cost plan makes home-owning easier and simpler than ever before. Just clip and mail the coupon below today.

NATIONAL LIFE
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HOME OFFICE—
MONTPELIER, **VERMONT**

A Mutual Company, founded in 1850, "as solid as the granite hills of Vermont"

CLIP AND MAIL THIS COUPON

NATIONAL LIFE INSURANCE CO., DEPT. M-5, MONTPELIER, VT.

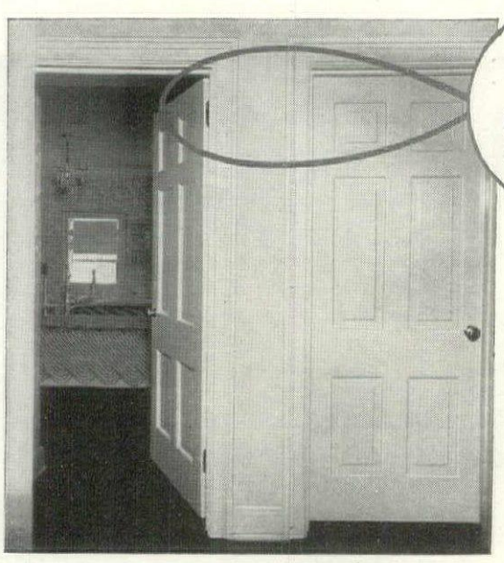
Please send me full information on your new, low-cost, all-inclusive plan for home-financing, and address of your nearest loan correspondent.

*Name*_____

*Business or Home Address*_____

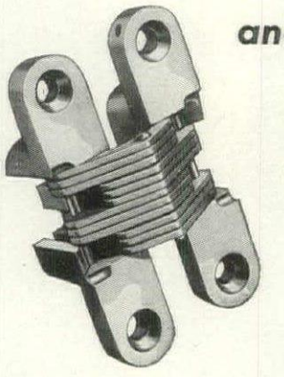


NEWS



The SOSS INVISIBLE Hinge

"It is Different . . . and so Modern!"



● How often you hear this remark when folks inspect a home where the doors, panels and cupboards have no hinges showing . . . in other words, when SOSS INVISIBLE HINGES are "on the job." These hinges give THE modern touch. They eliminate unsightly broken surfaces marred by protruding butts, and permit the flush surfaces so important in modern streamlined design. Soss Invisible Hinges are located where hinges naturally should be—out of sight. They are nationally advertised.

Write for the Soss "Blue-Print Catalogue" giving full details of the many applications of this modern hinge. Free on request.

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SEE OUR CATALOG IN SWEET'S

SOSS Invisible HINGES
The Hallmark OF TOMORROW'S HOME

PEOPLE

INSURANCE HOUSING HEADS

N. Y. Life gets ready for big job.

New York Life, holding the number four purse among insurance companies (up on top are Metropolitan, Prudential and Equitable), gave two signs last month of its growing plans for housing investment. The company:



NELSON

- Started construction on a 17-acre tract in Princeton, N. J., where it will build 150 garden-type apartments. (FORUM, May '46).
- Established a housing department to handle its fast-filling hopper of projects, including plans to construct more than 3,000 units on a 141-acre site in Queens.

Heading up the new department is Assistant Secretary O. L. Nelson, recent addition to New York Life's executive list. Ex-Major General Nelson previously served as Assistant Deputy Chief of Staff in the War Department and as Deputy Theatre Commander in the Mediterranean Theatre.



GURNEY

G. Harmon Gurney, Chief Housing Expert and Planner, will be responsible for New York Life's design thinking. Gurney, formerly a Starrett Bros. and Eken man, was an associate architect on New York City's Williamsburg Houses.

DESIGN FOR LIVING

Housing pioneer gets annual award.

Lord & Taylor, swank New York department store, which has been making American Design awards for the last nine years, this year gave its attention to those who had contributed "designs for living." Accordingly, one of Lord & Taylor's four $1,000 awards went to housing pioneer Ernest J. Bohn. Bohn, who has been director of the Metropolitan Cleveland Housing Authority since its organization, was instrumental in securing for Ohio in 1933 the first public housing law in the country. A leading exponent of the good-

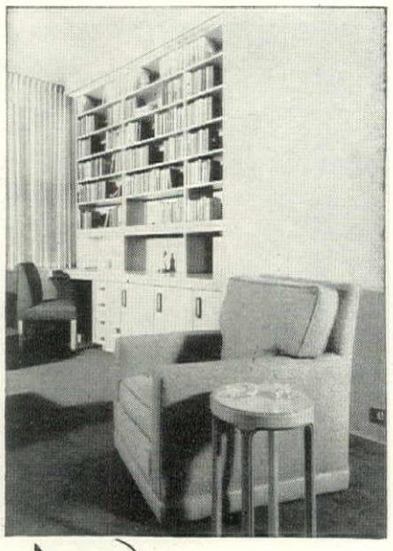


BOHN

(Continued on page 32)

Save Time and Money

—Decorate over new plaster with LUMINALL



THAT does it!



Use directly on new plaster—no primer needed

There is no need to delay delivery of a building on account of a long drying period between plastering and decorating. Interiors can be safely and beautifully decorated with LUMINALL paint while the plaster is still damp.

LUMINALL provides a *porous* paint film which allows moisture from new plaster to escape without damage to plaster or paint. It is a highly light-reflective paint.

The high decorative value of LUMINALL recommends it for the finest of interiors—yet its moderate cost permits its use for work or storage areas. It is easily applied with a wide brush—dries in 40 minutes—one coat covers. Available in white and many lovely colors.

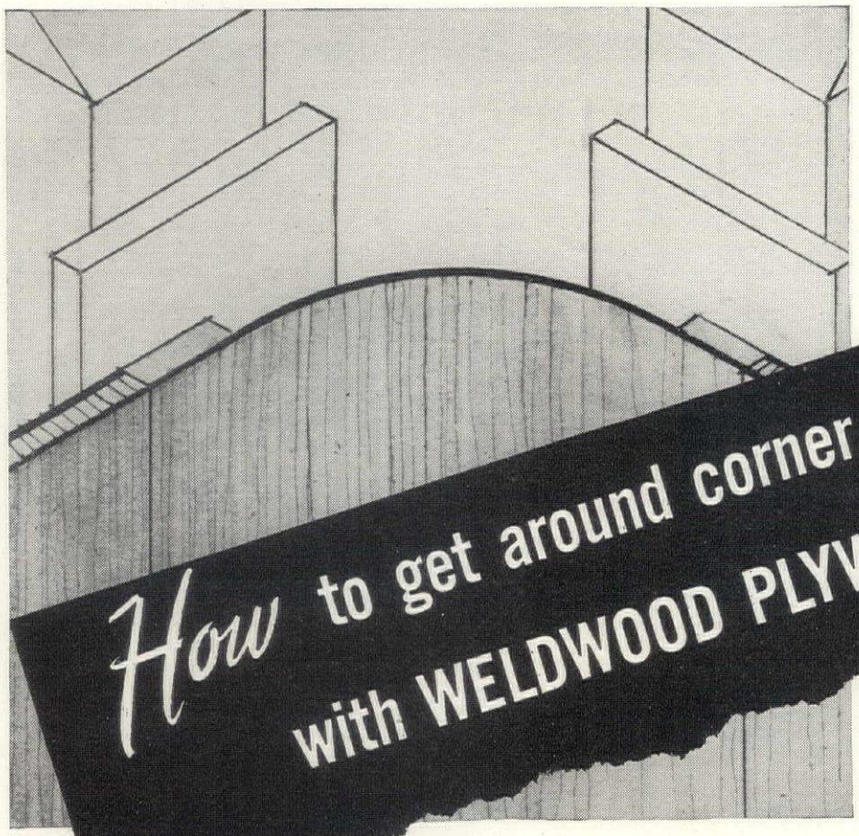
Ask for Your Copy

Send for "Painting for Light & Decoration" which gives complete data, information, and specifications on the use of Luminall in non-residential structures.



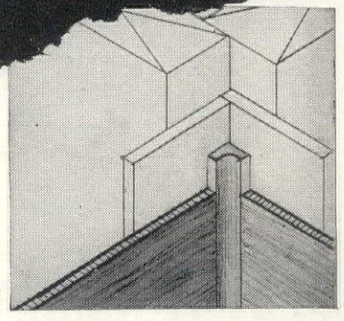
NATIONAL CHEMICAL & MFG. CO.
3612 S. May St., Chicago 9

LUMINALL

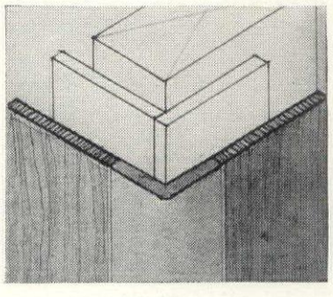


How to get around corner problems . . . with WELDWOOD PLYWOOD

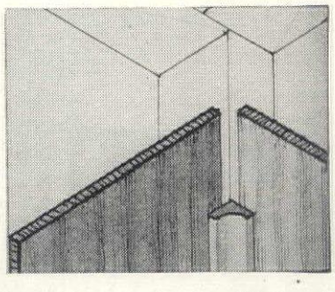
1. This Weldwood Snap-in Internal Corner, made of wood veneer mounted on thin, flexible metal, harmonizes gracefully with modern curved architectural effects. Glue is applied between the backing-strip and stud, and the entire corner assembly is snapped into position.



2. Internal corner, showing fir sticks finished with standard ¾ x 1⅝ inch cove mold set between panels.



3. Attractive external corner with fir sticks, finished with standard one-piece corner molding.



4. Internal corner showing Weldwood applied direct to framing with ½ inch vent opening and stock ¾ x 1⅝ inch cove molding.

The illustrations on this page show a few of the ingenious and attractive corner treatments featured in the new Weldwood Plywood installation booklet.

With Weldwood you can achieve charming and unusual architectural effects . . . save plaster costs and headaches, too.

Made in the finest domestic and imported woods, Weldwood provides an infinite variety of exquisite grains and subtle tones.

And remember, Weldwood Plywood is *guaranteed* to outlast any building in which it is used.

Send for free booklet

The new Weldwood Installation Booklet is profusely illustrated with photographs and detailed drawings. It gives a fund of useful information concerning Weldwood's many advantages, and its place in today's building picture. Send for your free file copy today.

Weldwood

Plastics and Wood Welded for Good

Waterproof Weldwood for exterior use is bonded with phenol formaldehyde synthetic resin. Other types of water-resistant Weldwood for interior applications are manufactured with extended urea resins and other approved bonding agents.

WELDWOOD Plywood

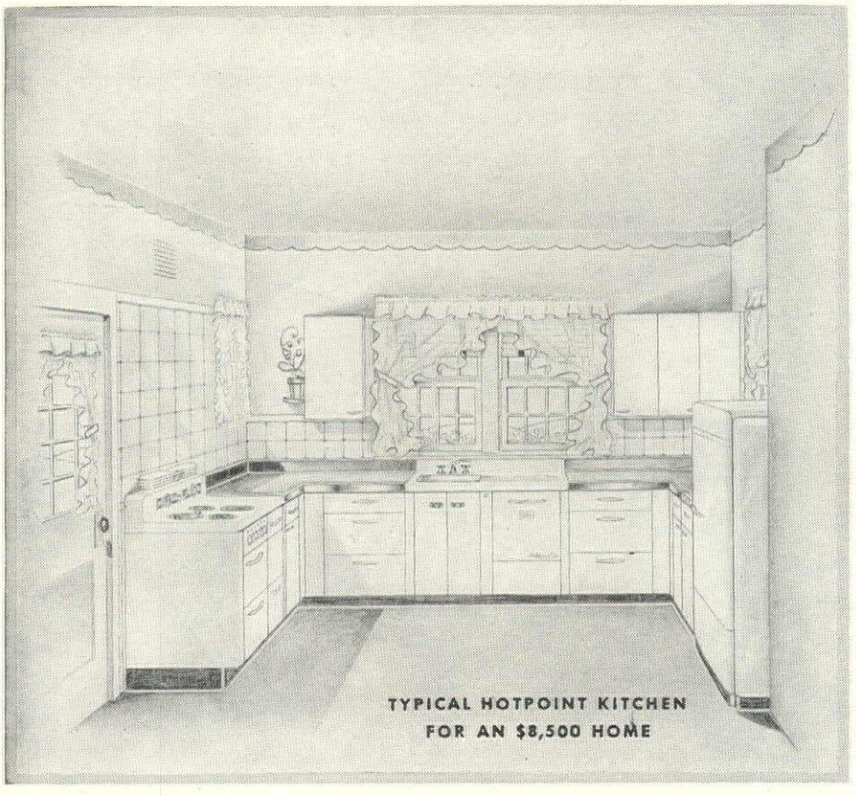
Weldwood Plywood and Mengel Flush Doors are products of

UNITED STATES PLYWOOD CORPORATION *New York 18, N. Y.*

THE MENGEL COMPANY, Incorporated *Louisville 1, Ky.*

Distributing units in Baltimore, Boston, Brooklyn, Chicago, Cincinnati, Cleveland, Detroit, High Point, Los Angeles, Newark, New York, Oakland, Philadelphia, Pittsburgh, Rochester, San Francisco, Seattle. Also U. S.-Mengel Plywoods, Inc. distributing units in Atlanta, Jacksonville, Louisville, New Orleans, St. Louis. *In Canada:* United States Plywood of Canada, Limited, Toronto.

Send inquiries to nearest point.



TYPICAL HOTPOINT KITCHEN
FOR AN $8,500 HOME

RECOMMENDED EQUIPMENT

ITEM	QTY.	DESCRIPTION	CAT. NO.
1	1	RANGE	37"
2	1	REFRIGERATOR	6 CU FT.
3	1	DISHWASHER-SINK	48" WIDE
4		DISHWASHER	
5		DISPOSALL	
6		CABINET SINK	
7		SINK CABINET	
8			
9	2	BASE CABINET	24" "
10	1	" "	15" "
11			
12			
13			
14	2	COR. BASE CABINET	42" WIDE
15		UTILITY CABINET	
16	1	WALL CABINET	18" "
17	1	" "	15" "
18	1	" "	30" "
19	1	" "	18"x36" "
20			
21		COR. WALL CABINET	
22	2	FILLER	BMF 34"
23	1	"	W&F 30"

Hotpoint KITCHEN PLANNING SERVICE
COMMERCIAL ENGINEERING DIVISION
DRAWN Ann Tarney
APPROVED E. Goetsch
DWG. NO. AKL45664 DATE 8-22-45
EDISON GENERAL ELECTRIC APPLIANCE CO., INC.
5600 WEST TAYLOR STREET CHICAGO, ILLINOIS

PLAY IT SMART... build for '66 in '46!

DESPITE skyrocketing prices . . . inflation threats . . . housing shortages . . . clients want to invest in long-term comfort, security and convenience. They can afford homes today with tomorrow's advantages. With electricity recognized as the fuel of the future, a planned, all-electric kitchen belongs in every home. The difference in cost is negligible, as our kitchen specialists will demonstrate. A Hotpoint electric kitchen, complete to the smallest matching cabinet, gives your client pride of ownership now and years after the building boom has passed.

Learn the details of cost and planning from Hotpoint kitchen specialists. Send for the *Portfolio of Personalized Kitchen Plans* for homes in all income brackets. Attach the coupon below to your letterhead and mail to us today for your copy of this useful *Portfolio.*

Electric Kitchen Trend Well Established! Attention has been focused on the electric kitchen as the No.1 room in the modern home by over a million and a half dollars of national advertising by Hotpoint during the war years—by scores of articles in leading magazines and newspapers—and by distribution of over two million booklets "Your Next Kitchen" by Hotpoint to home makers who will build or remodel.

Hotpoint ranges carry a Class "O" rating from Fire Underwriters which means zero clearance on all sides. They may be installed tight against the rear wall with inflammable cabinets tight against each end.

HOTPOINT REGIONAL SALES OFFICES. EASTERN: 570 Lexington Ave., New York City 22, Plaza 3-9333. **SOUTHERN:** 304 Red Rock Bldg., Atlanta 3, Walnut 2959. **CENTRAL:** 1456 Merchandise Mart, Chicago 54, Superior 1174. **WESTERN:** Western Merchandise Mart, 1355 Market Street, San Francisco 3, Underhill 2727;

In most states, all Hotpoint kitchen equipment can be included in F.H.A. insured mortgages.

The Hotpoint Institute
5651 West Taylor Street, Chicago 44, Illinois

Without obligation, please send me your *Portfolio of Hotpoint Personalized Kitchen Plans.* This offer available in United States, Territory of Hawaii and Alaska.

Name_____

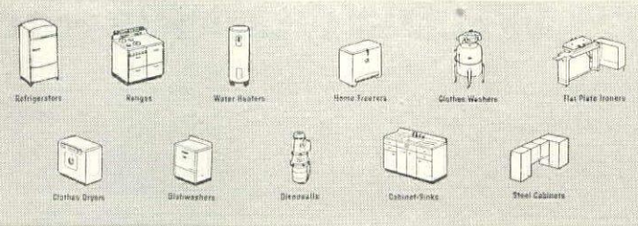
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Address_____

City_____ State_____

Copr. 1946 Edison General Electric Appliance Co., Inc., Chicago

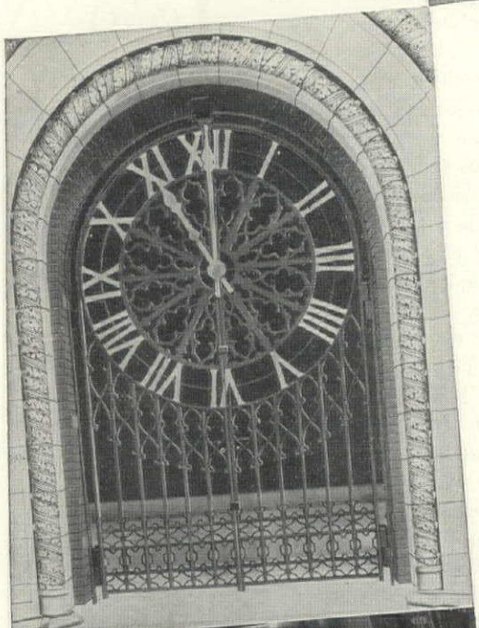
Hotpoint
ELECTRIC KITCHENS
DEPENDABILITY ASSURED BY 40 YEARS EXPERIENCE

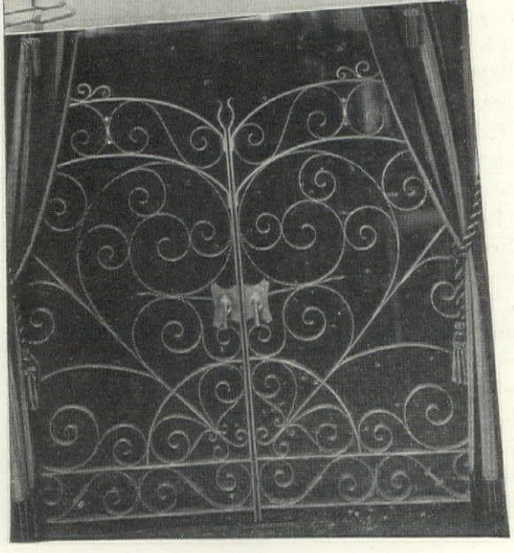


BEAUTY ★

UTILITY ★







★ *You get them both when you use*

ARCHITECTURAL METALS

Perhaps your design problem is that of adding distinctive beauty to a purely functional feature.

In planning decorative grilles, for example, you may wish to give graceful detail to a practical design.

The use of Architectural Metals can often help you accomplish this. These metals are so easily adaptable, you can obtain almost any decorative scheme you want.

In both ferrous and non-ferrous metals you have a varied selection to choose from. There are many different materials —many qualities, colors and characteristics. Your thinking as to shapes and fabrications is allowed a wide range of activity.

As you design new buildings or the ornamental details for them—doors, stairs, railings, store fronts, or a hundred and one other items—plan now to make full use of Architectural Metals. The manufacturers and fabricators of Architectural Metals will be glad to help you in working out the details of many of your design problems.

If you would like a copy of a new Handbook on Metal Stairs and Railings just published by the Association, we suggest that you contact any of the members. For a Directory of leading fabricators, write to Dept. AF-6.

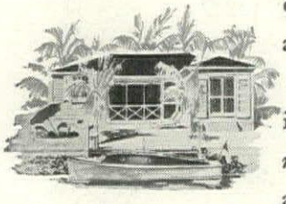
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ORNAMENTAL METAL MANUFACTURERS

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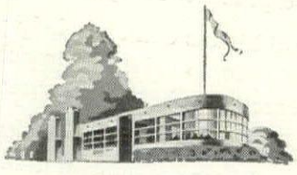


Architects and builders knew it; now War has proved it again . . . Homasote's structural strength, insulating qualities and big sizes make an unbeatable combination.

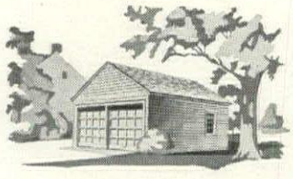


This *weatherproof* insulating and building board is *right*—for new construction and modernization alike.

As interior finish—in residences—Homasote provides the ideal, crackproof surface for paint or wallpaper. And the big sheets eliminate unnecessary wall joints and batten strips.



As sheathing or exterior finish—in residences, garages and other buildings—Homasote's great structural strength and top insulating qualities make it the *practical* building material. And the big sheets mean less handling, fewer nailings, less waste.



We invite architects and builders to write for our new fully illustrated booklet—suggesting some of the many uses for *weatherproof* Homasote. The book gives physical characteristics, performance charts, specification data and application instructions. Write for your copy today.

HOMASOTE COMPANY, Trenton 3, N. J.

housing-is-good-business point of view, Bohn first got interested in slum clearance and low-rent housing when he was a Cleveland city commissioner. Appalled at the cost to the city for special services in slum areas and at the high rate of disease and delinquency among the underhoused, Bohn began plugging for action to clean up these urban sore spots, had signal success in enlisting the support of his fellow Republicans. Since then, housing has consistently diverted his attention from politics; he once turned down an offer of nomination for Cleveland's Mayor because he couldn't think of giving up his housing job.

SAVINGS AND LOAN FUTURE

New executive says Building Money must lead in community planning.

Carl Distlehorst, new manager of the American Savings and Loan Institute, Chicago, looks to Building Money for leadership in community planning. Over the last 25 years the Institute has done a good deal to equip lenders for the job. Its 75 chapters have conducted classes in many universities and it has established a graduate school at Indiana University.

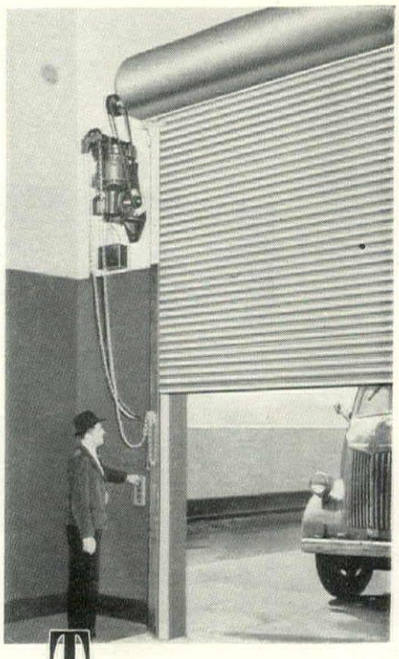
Distlehorst, a onetime college professor, got interested in the savings and loan field when he began teaching Institute-sponsored classes at the University of Pittsburgh. In no time at all he was tapped by the Federal Home Loan Bank of Pittsburgh where, as assistant to the president, he undertook the rehabilitation of the savings and loan business in a state hit harder than most by the real estate collapse of the thirties. He later served as assistant vice-president of the U. S. Savings & Loan League and as president of the New York Council of Insured Savings Associations.



DISTLEHORST

Right now Distlehorst isn't much worried about a real estate collapse anytime soon. He thinks present prices will still look pretty good five years from now and that full employment will continue for a while. "Real estate today does not reflect its full scarcity value. Buyers have been cautious and haven't driven prices up higher than the big supply of money would justify."

What Distlehorst is worried about is over-expansion of housebuilding capacity. "Three million houses in two years means developing a productive plant greater than ordinary needs. You can't deflate this capacity with the same ease that you can expand it. It is conceivable that an over-expanded housebuilding industry could start a flash postwar depression."



Today's Needs for

SPEED

SAFETY

ECONOMY

EFFICIENCY

DURABILITY

make KINNEAR ROLLING DOORS more necessary than ever

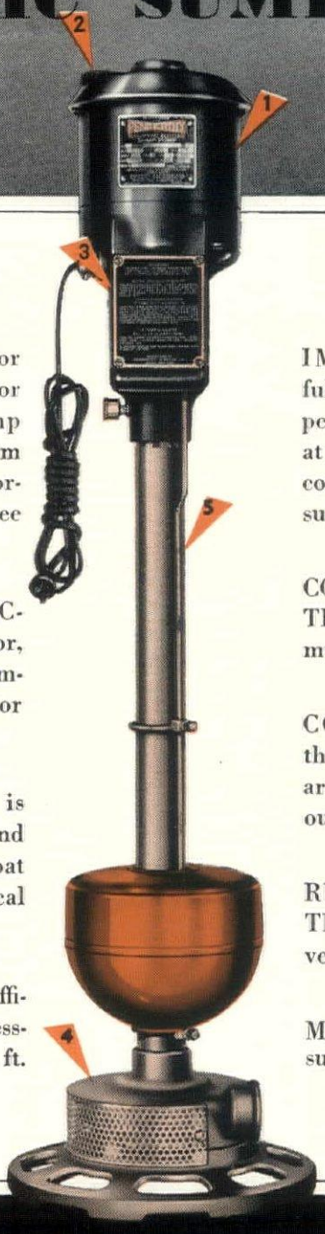
KINNEAR ROLLING DOORS

The KINNEAR MANUFACTURING CO.
1540-60 Fields Ave., Columbus 16, Ohio
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Points of Distinction

OF THE MODEL M

PENBERTHY AUTOMATIC ELECTRIC SUMP PUMP



1 MOTOR—¼ hp capacitor type special vertical motor designed expressly for sump pump operation has maximum resistance to moisture and corrosion, and is practically free from radio interference.

2 OVERLOAD PROTECTION—Built into motor, protects motor in case of improper voltages, overloading or trouble of any kind.

3 MERCURY SWITCH is sensitive, dependable and particularly adapted to float operation. It has no mechanical contacts to wear or spark.

4 IMPELLER has high efficiency and operates successfully against a head of 22 ft.

5 IMPELLER SHAFT is fully enclosed and held in perfect alignment by bearings at both ends. Flexible spring coupling relieves motor shaft of sudden starting shocks.

6 COPPER AND BRONZE THROUGHOUT; it is immune to corrosion.

7 COMPACT DESIGN—there are no protruding arms or levers to bend and get out of order.

8 RUGGED CONSTRUCTION assures long life and very satisfactory operation.

9 Made in FIVE SIZES for sump depths, from 2 to 8 ft.

PENBERTHY INJECTOR COMPANY

DETROIT 2, MICHIGAN

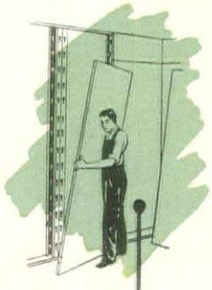
Established in 1886

PENBERTHY PRODUCTS

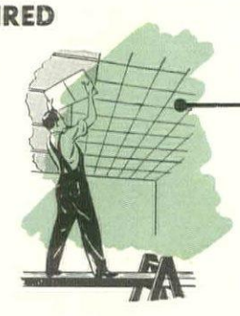
Canadian Plant, Windsor, Ont.

ONCE YOU HAVE THESE JOHNS-MANVILLE WALLS—CEILINGS—FLOORS, YOU CAN KEEP CHANGING THE WHOLE BUILDING INTERIOR AS REQUIRED

MOVABLE WALLS—The keystone of flexibility in Unit Construction is the J-M Transite Wall. Can be disassembled and relocated as needs require. One-unit rooms, for instance, can be speedily converted into two-unit rooms, or vice versa. Made of fireproof asbestos and cement, practically indestructible materials, the movable panels form rigid, double-faced partitions, 4″ thick. Can also be used as interior finish of the outside walls. Removable Transite panels permit ready access to wiring, etc.

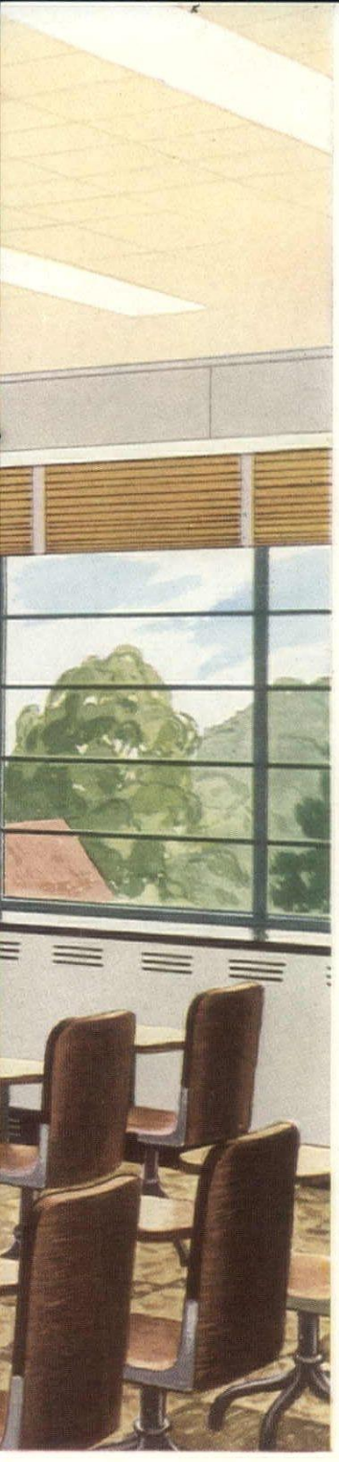


ACOUSTICAL CEILINGS—Important factor in helping to overcome the handicap of distracting noise, Johns-Manville Acoustical Ceilings are beneficial both to teacher and student alike. They give the desired degree of quiet for effective teaching, and are proved aids to concentration. An exclusive Johns-Manville patented construction system permits interchangeability of flush-type fluorescent lighting and acoustical units, which are readily demountable.

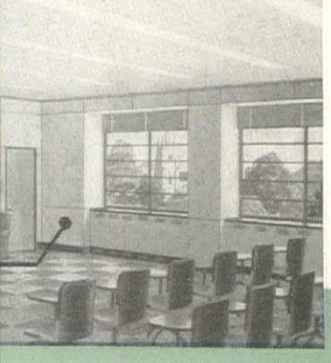




COLORFUL, RESILIENT FLOORS—J-M Asphalt Tile Flooring completes the Unit Construction System. Made of asbestos and asphalt, the units withstand hard wear, yet are comfortable and quiet underfoot. Individual units permit easy alterations or extension of patterns. Made in a wide variety of plain and marbleized colors.



n now, it may be a laboratory tomorrow
or rearranged to meet a new need!
ıctural flexibility made possible by the
le Unit Construction System.



"Structurally flexible"

Yes! This attractive university lecture room can be enlarged, subdivided, or even relocated!

Johns-Manville Unit Construction provides the complete interior for schools and colleges . . . offers many new advantages

HERE IS CONSTRUCTION that sets new standards of architectural beauty and at the same time meets the long-existing need of schools and colleges for *complete structural flexibility*.

Whenever educational needs present new requirements, you can expand, convert, or subdivide interiors built with Johns-Manville Walls, Ceilings, and Floors.

You can vary the size or arrangement of rooms and corridors . . . make endless revisions of space-use . . . and do it economically, quickly, without waste of material!

Also, this proved method of construction makes the whole interior—walls, ceilings, floors—available under *one* specification, *one* manufacturer's responsibility. Each material contributes individual advantages:

1. **Movable Walls** . . . readily assembled . . . are interchangeable . . . 100% salvageable. Made of sound-resistant, asbestos-cement Transite panels . . . hard to mar, easily cleaned by a simple washing—advantages that make a big difference in the maintenance budget.
2. **Acoustical Ceilings** . . . attractive . . . demountable . . . reduce distracting noise. Units can be taken down and relocated as desired.
3. **Colorful, Resilient Floors** . . . quiet underfoot. Small units permit easy extension of floor pattern.

All these constituent parts are durably built to last as an *integral* part of the building. Write for further information and details on this significant development in the construction of educational buildings. Address Johns-Manville, Department AF-6, P. O. Box 290, New York 16, N. Y.

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JM
PRODUCTS

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PHALT TILE FLOORS • MOVABLE TRANSITE WALLS • ACOUSTICAL CEILINGS

What Every Home Builder Should Be Told About

AUTOMATIC WATER HEATERS

IF HIS water heater isn't big enough and fast enough, those wonderful new kitchen and laundry appliances won't work.

Automatic washing machines and dishwashers, to operate properly, must have a dependable supply of *hot* water. *Plenty* of it. That means an automatic storage water heater capable of supplying hot water *when it's needed.*

And it must be *clean* hot water—free of any tank rust or corrosion.

SMITHway *Permaglas* Water Heaters meet ALL these requirements. They have capacities big enough for every need. Their *Permaglas* tanks are insulated with an extra-heavy blanket of Fiberglas.



There's Only ONE *Permaglas*

This sparkling blue, mirror-smooth glass-fused-to-steel resists rusting and corroding under *any* water condition. No more "tank-spots" or corrosion dirt to stain clothes, streak dishes, discolor the bath.

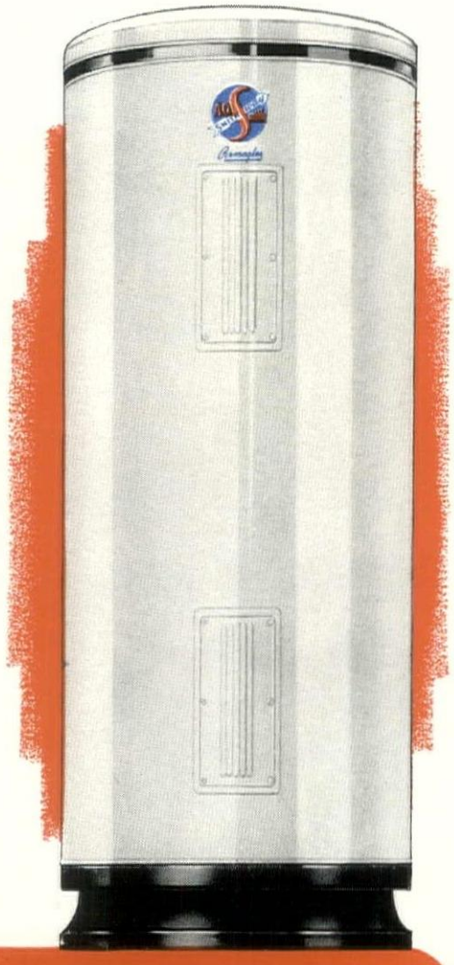
Only SMITHway has the *Permaglas* Tank.

Now You Can Specify Sparkling Clean Hot Water

For new homes . . . for modernized homes . . . here is the ONE automatic water heater that meets all modern demands—for complete service, great convenience, long life.

Write today for all the facts. Address the A. O. Smith office nearest you.

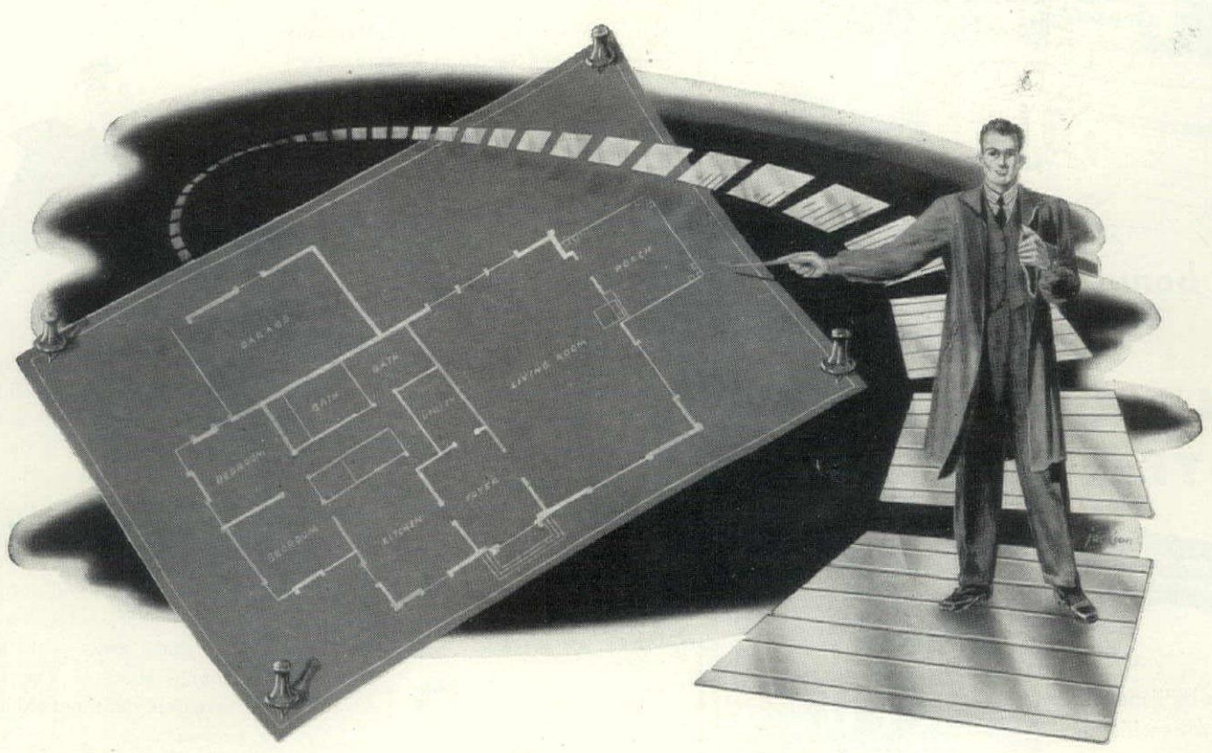
Automatic — Gas or Electric



Permaglas
WATER HEATERS

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HOUSTON 2 • LOS ANGELES 14 • SEATTLE 1
INTERNATIONAL DIVISION: MILWAUKEE 1—*In Canada: JOHN INGLIS CO., LIMITED*



EVERY ROOM IN THE HOUSE

a world of modern comfort, built with STEEL insulation

Wherever new homes are being built . . . wherever old homes are being remodeled . . . more and more architects and builders are specifying Ferro-Therm, the modern reflective all-steel insulation . . . that keeps 90 to 95% of all radiant heat just where it belongs . . . Reduces fuel costs by 20-30% . . . Remains 100% efficient for the life of the building.

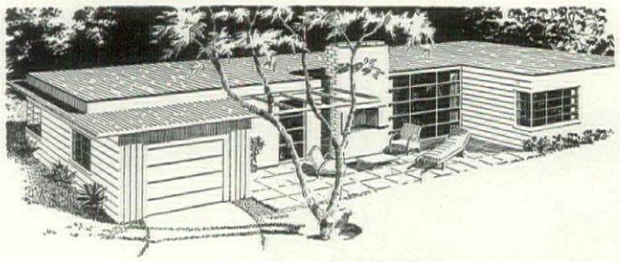
Ferro-Therm, for all its steel sturdiness, is thin and flexible . . . and comes in light, easy-to-handle sheets . . . ready for immediate and *permanent* installation . . . Also ideal for special remodeling jobs where the right kind of insulation transforms a musty attic or cold, damp cellar into a comfortable playroom, den or library . . . Write for information.

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AMERICAN FLANGE & MANUFACTURING CO., INC. STEEL INSULATION 30 ROCKEFELLER PLAZA, N. Y. 20, N. Y.



A bonus for buildings!

New

EAGLE Ready-To-Use WHITE LEAD PAINT

Born with a 2000-year-old pedigree



The glory of a brilliant white gloss that *holds* its whiteness can now be given to your buildings. And because of meticulous care in mixing, Eagle Ready-To-Use White Lead Paint possesses an exceptional smoothness that makes it more useful to property owners, easier to use for painters. It delivers to your clients a paint job that surpasses their greatest expectations, and enhances your reputation.

Traditional white lead in a new, convenient form

Eagle RTU Paint is backed by the 2000-year-old white lead reputation plus more than a century of Eagle-Picher paint making experience. It preserves the durability, beauty and economy made famous by white lead . . . and adds new, time-saving convenience. You can specify it with complete confidence.

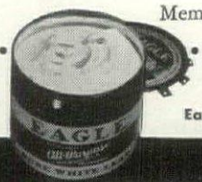
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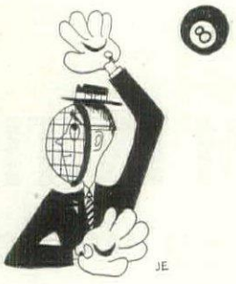
A LETTER FROM THE PUBLISHER

Dear Reader:

Wilson Wyatt has gotten substantially what he asked for from Congress (see page 6) Congress, and more important, the public, will now expect to get substantially what Mr. Wyatt promised—2,700,000 housing units started by the end of 1947. If the materials flood, not flow, the next bottleneck is likely to be labor. This is the time for some clear-eyed member of the Administrator's staff to plan against that probability. This is one of the 8-balls that could drop into short right field if someone isn't ready to catch it.

* * *

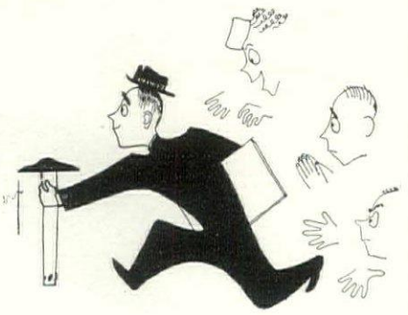
And speaking of 8-balls, not much seems to be happening to close the schism between a considerable part of the public which wants the new *kind* of house (20th century) and the builders who quit this century the minute they leave the kitchen and bathroom. There



is evidence galore that the market for a new kind of house is tremendous—perhaps as great as the demand for those little numbers the builders are so fond of exhuming from their 18th century graveyards. Of course, the corpse has to be dressed up with a few new gadgets—but it is still a corpse. If some of the progressive architects would make an effort to get together with even a few progressive builders (and there are some), a lot could happen. For one thing, some veterans might really get a break. Naturally, there have to be a few bankers willing to replace the traditional glass with a glint in the eye. Next month's FORUM will show such desirable citizens how to do it.

* * *

Buildings projected up and down the West Coast defy statistics. It is as hard to get an architect as a plane or hotel reservation. A new architectural firm is born every morning and doing business by evening. The stampede to "modern," in some cases by men "who have never been there," as Morris Ketchum once



remarked, is something to see. But with it all is a volume of solid contemporary design which is going to change our cities unbelievably in the next five years. If city planning would only catch up with building design, if there were more "Baldwin Villages" and not just one in Los Angeles, if there were more underground garages and not just one in San Francisco, if there were—well, we almost gave away some secrets. Watch coming issues of The FORUM for the most important and exciting things you ever saw.

* * *

Speaking of San Francisco, this city has more to claim your attention than its dramatic views. It has more top people in all of the arts than any other city which comes to mind. It not only has an abundance of top architects, builders who can build anything—and often do, fine painters and sculptors, a craft group led by the world's greatest weaver, landscape architects who know how and who know when to stop, outstanding museum directors, but even a Chamber of Commerce President who acts less like one than any other C. of C. prexy alive. Most of all, San Francisco appears to have more civilized people than other cities. Whether they thrive under this constellation of stars or whether the stars shine brighter in this sympathetic heaven is a chicken-and-egg argument. Vice or versa, San Francisco has what it takes and, even more important, San Franciscans take what it's got!

* * *

According to the *N. Y. Times* of May 9th, President Edmunds of the American Institute of Architects, convening in Miami Beach, "restated the Institute's opposition to federal ownership and management of housing . . .". This item serves to remind us that the *Times* is the paper which runs "all the news THAT'S FIT TO PRINT." H. M.



Engineers' Club, Dayton, Ohio
Architects: Schenck & Williams, Dayton, Ohio
Applicator: Myron Cornish & Company, Dayton, Ohio

ONLY K&M SPRAYED "LIMPET"* ASBESTOS CAN GIVE YOU ACOUSTICS *And* FULL ARTISTIC FREEDOM

NOISE REDUCTION is a highly desirable feature in the design of modern clubs, restaurants, hotels and cocktail lounges . . . but so is freedom of architectural expression. That's why K&M Sprayed "Limpet" Asbestos is the ideal acoustical material. It assures the required degree of sound absorption, at the same time offering full latitude for carrying out architectural motifs. In the illustration above, for example, notice the many curves and recesses in the pattern of the ceiling. Sprayed "Limpet" Asbestos treats these irregularities as easily as plane surfaces.

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Is it any wonder that more and more architects on more and more jobs are specifying Sprayed "Limpet" Asbestos. If it's new to you, it will pay you to investigate it at once.

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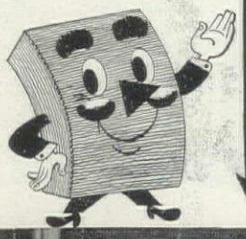
2. MANUFACTURING FACILITIES: All equipment (machines, motors, controls, and accessories) built by Otis for Otis . . . thus assuring minimum possibility of delays in shipment of any parts from other manufacturers. Best possible deliveries, depending on availability of raw materials.

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HISTORY'S GREATEST NEW-HOME MARKET IS OPEN



and here's why KIMSUL* INSULATION has an important place in your building plans





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Whether you plan custom-built or prefab housing, you can provide a better, quicker insulation job by specifying KIMSUL. For KIMSUL is a scientifically designed, many-layer blanket, pre-stitched to a tough, water-proof cover . . . made to assure simple installation, permanent satisfaction. Delivered compressed to 1/5th its installed bulk, KIMSUL minimizes handling. Expanded on the job, it quickly provides thorough, positive insulation coverage of uniform density and thickness.

Check these points of KIMSUL superiority

1. *Efficient:* "K" factor—0.27. Average coefficient of sound absorption for Double Thick KIMSUL—0.67.
2. *Resistant to fire,* moisture, fungus and vermin. Termite-proof.

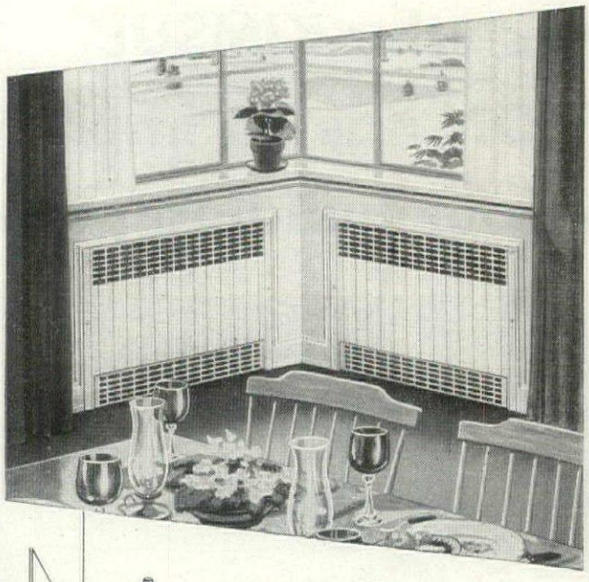
Fits the Prefabrication Picture

3. *Permanent insulation*—won't sag, shift or settle.
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5. *Standard widths* to fit between joists, studs or rafters, and in giant widths for prefabrication. Three thicknesses: Commercial Thick (about ½"), Standard Thick (about 1") and Double Thick (about 2").
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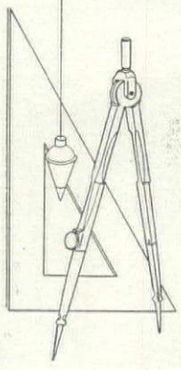
For complete technical data on KIMSUL Insulation, refer to Sweet's 1946 Catalog or write to Kimberly-Clark Corporation, Neenah, Wisconsin

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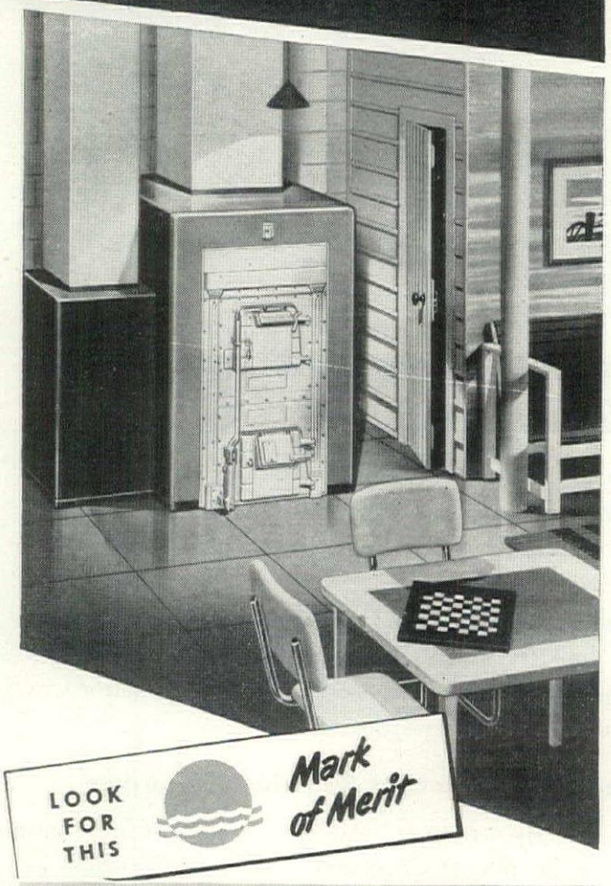
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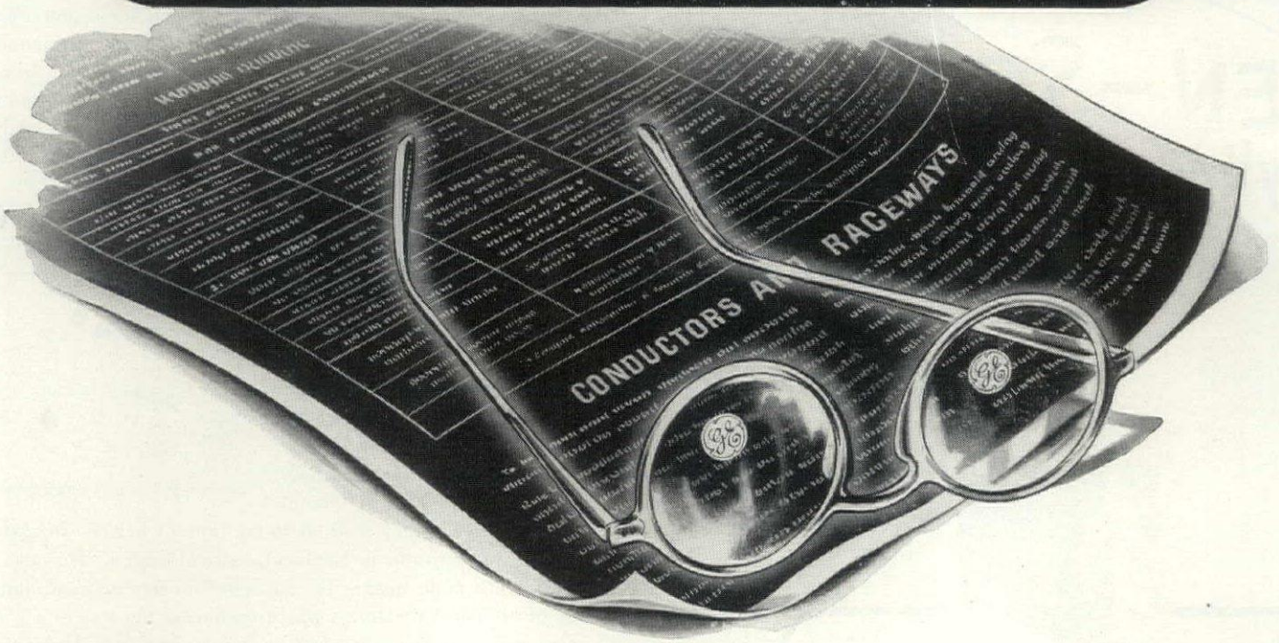
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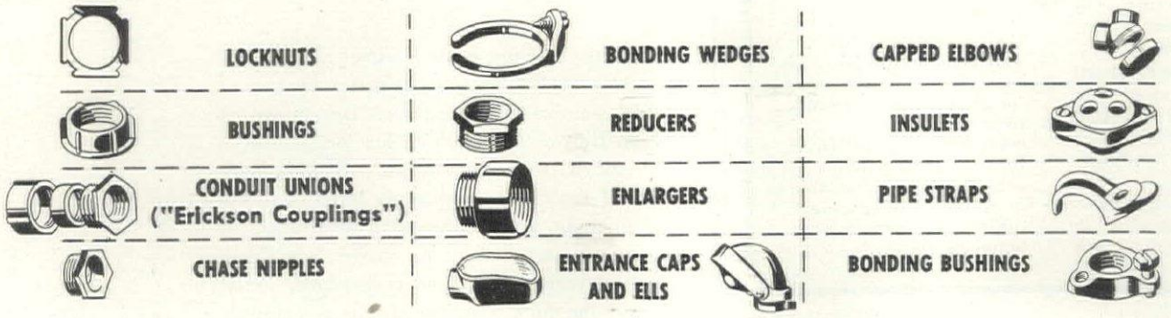
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Say G.E. when you specify rigid conduit, and make sure that there are no weak spots in the armor of your buildings' wiring systems. Give your clients the benefits of General Electric's long experience in making top quality conduit and fittings – General Electric's reputation for products that give lasting service.

If any part of the wiring system is exposed to the corrosive action of salts, acids, or alkalies, or other chemical liquids or fumes – specify asphalt-base baked enamel-coated G-E Black conduit. For protection from atmospheric corrosion resulting from the effects of heat, cold, sunlight, moisture and weathering – specify hot-dipped, zinc-coated G-E White conduit.

Don't stop there! Specify *G-E boxes and fittings* for use with *G-E conduit*, and be assured of easy installation and added safety. Remember: Put G.E. in your "specs," and let your customers "see" the long-lasting service they will obtain.

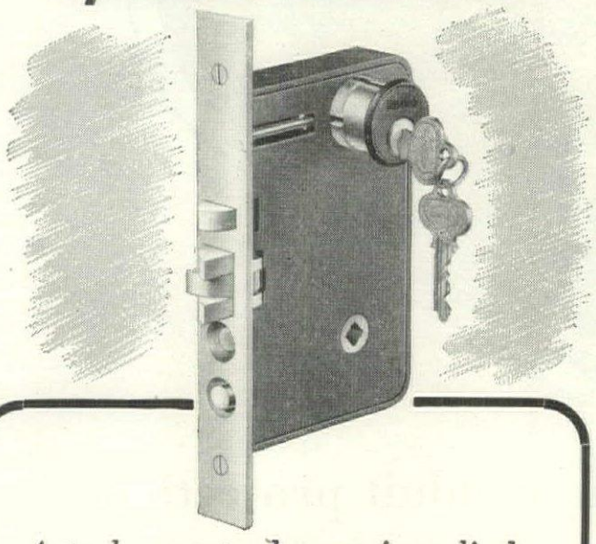


Ask your local G-E office for information, or write to Section C663-26, General Electric Company, Appliance and Merchandise Department, Bridgeport, Conn.

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New!

RUSSWIN "TEN-STRIKE" Cylinder Lock Line



A truly great advance in cylinder locks. 10 outstanding advantages.

1 **STANDARDIZED CASE** - 30 lock functions available in one size case.

2 **CASE IS SMOOTH** - no bosses or projections mean better fit, easier mortising.

3 **HUBS, LATCH BOLTS and DEAD BOLTS** are forged bronze; all interior working parts are extruded or wrought metal, to withstand abuse and assure long service.

4 **ARMORED FACE** protects against tampering. By changing the face plate, the lock can be adapted to various functions. Finish can be similarly changed. Rabbeted front can be supplied.

5 **THE FIRST LOCK with REVERSIBLE** anti-friction Latch Bolt. ADJUSTABLE FACE PLATE makes the lock adaptable to any commercial door bevel.

6 **BALANCED KNOB ACTION**— same spring tension *in either direction* gives lock perfectly balanced knob action.

7 **ALL LOCKS** are available with anti-friction (⅝" throw) or plain (9/16" throw) latch bolt.

8 **DEAD BOLT LOCKS** are available with either ⅝" or 1" throw. Dead bolts are interchangeable so switch from standard to long throw is easy.

9 **FAMOUS RUSSWIN ADJUSTABLE BALL BEARING PIN TUMBLER CYLINDER.** Adjustable for doors from 1¼" to 2½" thick.

10 **TWO LINES** —
Standard: 1" x 8" front for 1⅜" doors 2½" backset (available in special 2¾" backset). Case is the same for all types of lock functions.
Heavy Duty: 1¼" x 8" front for 1¾" and up doors. 2¾" backset (available in special 2½" backset) otherwise identical with Standard series.

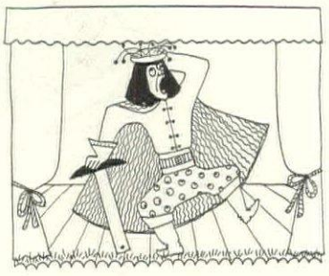
RUSSWIN "TEN-STRIKE" LOCKS represent a much needed development in simplifying cylinder locks. By means of a few interchangeable parts a lock can be adapted to different functions. These improved locks will be available soon. Russell & Erwin Division, The American Hardware Corp., New Britain, Conn.

SINCE 1839 RUSSWIN DISTINCTIVE HARDWARE

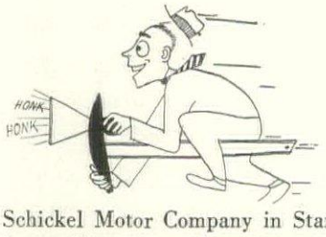
FORUM

Behind the scenes with FORUM contributors

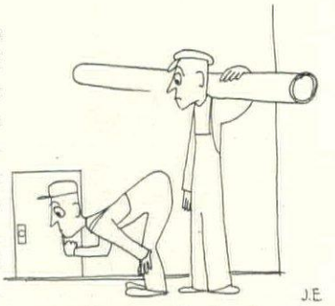
Gerald M. Loeb, pink-cheeked, round-faced business man whose New York home is two small hotel rooms, will burst from his cell (Mr. Wyatt permitting) into a new Frank Lloyd Wright extravaganza in the Connecticut hills (p. 83). In this palatial structure, which could easily accommodate a minor power's standing army, bachelor Loeb—who loves solitary tinkering and only occasionally entertains a couple of cronies over the week-end—may feel something like a small boy lost in a deserted stadium. A swimming pool, stable for horses and separate quarters for guests smacks of the touch Hollywood. Pure Frank Lloyd Wright, however, is the insistence, against shy but tortured clucks from Loeb, that there be no windows in the circular, air-conditioned bedrooms.



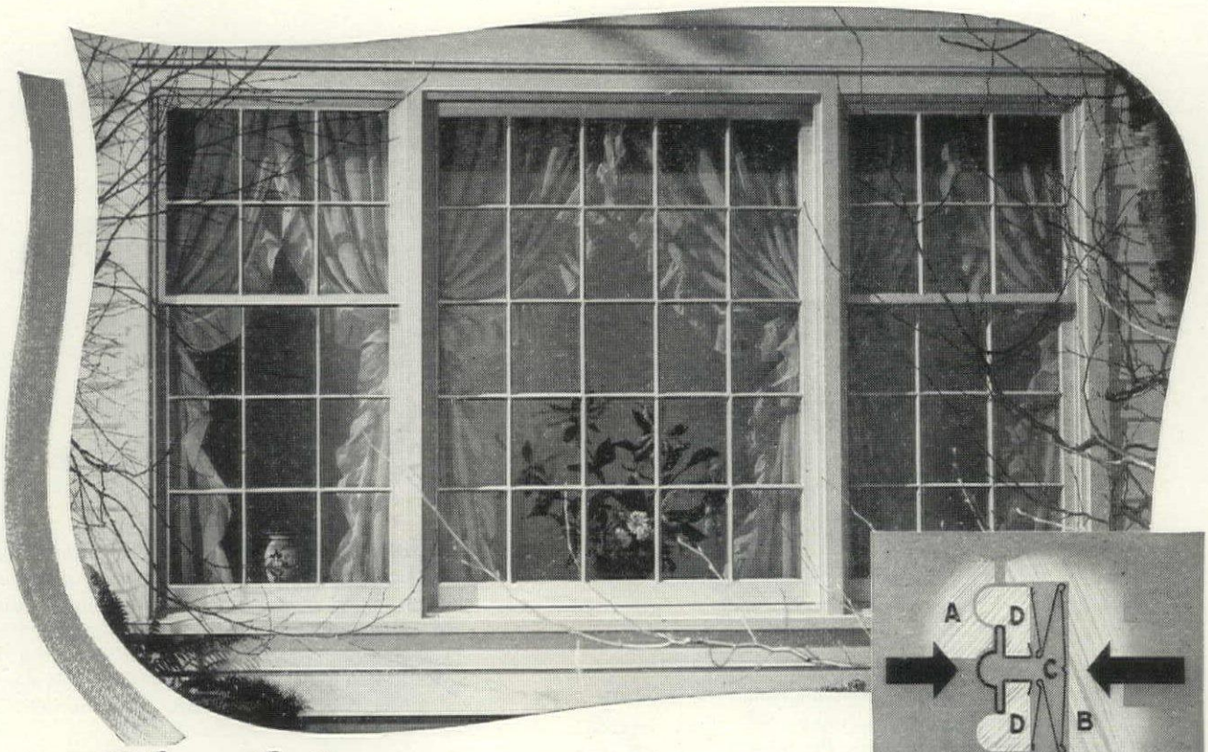
Hermann Herrey, who designed the Q-Theater in London (p. 97), has found being stage-struck a useful adjunct to his architectural practice. He started his career in the twenties when he put himself through engineering school designing surrealist sets for fancy pants grand opera. His somewhat startled clients have since gained a healthy respect for Herrey whimsey which is solidly backed by mechanical proficiency. One of his most famous flights of fancy paid off to the tune of $19,300 in savings, and established him as an innovator in English theatrical design. This was his idea of substituting lantern slide images for cumbersome sets of wood and canvas. Central theme of his latest theater, it was used during the war in a production of Julius Caesar and earlier with resounding success in Faust. Here, a group of angels were projected onto the stage, mixing harmoniously with their flesh and blood counterparts. Herrey proudly admits that even he couldn't tell a live actor from an ethereal image.



Norbert H. Schickel, architect, engineer and realtor for the Fairview Manor Apartment project in Ithaca, N. Y. (p. 104), zoomed into house construction from a lofty perch in the machine manufacturing business. Formerly a designer of trucks, taxicabs and motorcycles, and President of the Schickel Motor Company in Stamford, Conn., he views house design much as he would an internal combustion engine. The result, in his most recent venture, is a fireproof, soundproof, low-rental structure which works as efficiently as a well-greased motor. In connection with this pet project, however, Schickel admits an even more important design asset which few architects can match. Commended by a Fairview tenant on the many conveniences included for baby tending, he replied tartly: "Young woman, do you think I'd have known what to do if I hadn't lived through raising nine children of my own?"



Unlike the machine-made designer above, Dano Jackley evolved into an architect by way of the paint brush and palette. His studies at John Herron Art Institute led him to take a special course in architecture at Georgia Institute of Technology, have since lured him back to painting and etching as a divertissement from mundane duties. We suspect that Jackley's artistic soul must occasionally quail before the more practical aspects of building. J.E. Enough to irritate any architect was his recent experience with the Armiger building (p. 90), whose structure was completed before the heating contractor could get his pipe coils ready. Confronted with a door through which the oversized coils would not pass, the desperate architect had them cut in pieces, welded together again on the inside.

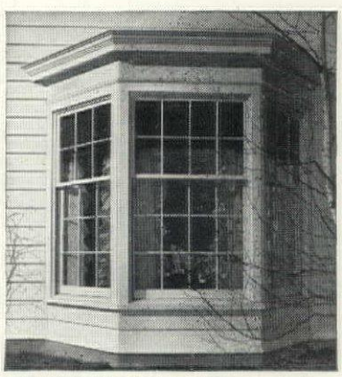


A *New Achievement*
IN WINDOW WEATHER-TIGHTNESS
...NEW SELF-FITTING SILENTITE

● No window can be modern unless it is truly weather-tight. And in the new Self-Fitting Silentite, Curtis engineers have utilized entirely new principles to provide complete weather-tightness in a double-hung window. The weather-stripping in the jamb channels is *self-fitting* (See diagram). A new design of meeting rail overcomes the problem of weather-stripping the space between the two window sections. An improved head weather-strip is employed. Extreme weather-tightness is obtained between frame members and frame and wall. There are no through cuts in jambs, thus eliminating air leakage. The new Silentite is 20% more weather-tight than the old unit. Weather-tightness is only *one* of the many features of this new Silentite—below are some of the others.

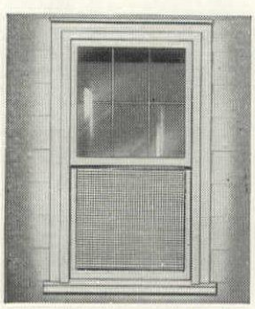
1866 CURTIS WOODWORK
SILENTITE
PRE-FIT
the "Insulated" window

NEW WEATHER-TIGHTNESS—Made of wood—in itself a nonconductor of heat and cold—the new Silentite has "floating" chemically treated wood sliding bars, and these are seated on full-length double Z-type bronze weather-strips. Sash (A) operates against sliding bead (D), which presses against metal Z-type weather-stripping (C) in frame (B). The new design of the meeting rail overcomes the problem of weather-stripping between two window sections!

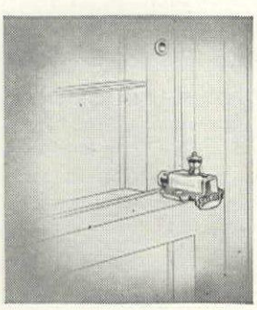


GREATER BEAUTY—Twelve designs of windows from which to choose—numerous styles of attractive bays, corner windows, window groups, all are yours with the new Silentite Self-Fitting Window!

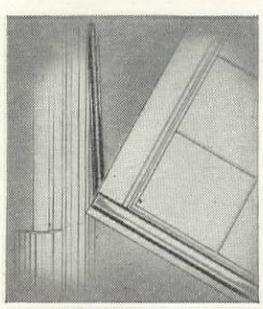
In Canada: W. C. Edwards & Co., Ltd., Ottawa



DOUBLE UTILITY—Removal and storage of storm sash and screens is eliminated with the new convenient Curtis combination screen and storm sash unit. Or, separate pre-fit screens and storm sash, hung from the inside, may be used.



NEW SAFETY LOCK—The new Self-Fitting Silentite locks in a closed or partly open position—new safety from intruders when ventilation is desired. New-style sash lock—marked "Silentite"—furnished with each window unit.



SIMPLE INSTALLATION—See how easy it is to install the new Silentite Self-Fitting Window! The sash is put in with minimum effort—yet, once installed, is firmly in place. Here's a big economy in installation.

CURTIS COMPANIES SERVICE BUREAU
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Gentlemen: Please send me full information on the new Silentite Window line.

Name.....

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Make kitchens more efficient with these *Frigidaire Appliances*

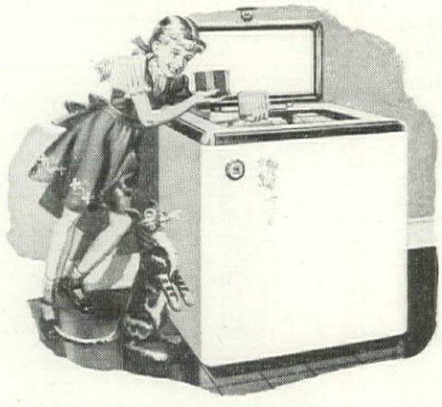


Frigidaire Refrigerator. Cold-Wall model shown has 16-way adjustable interior; rust-proof aluminum shelves; Super-Freezer Chest for freezing, storing foods. High-humidity storage guards against drying, shrinking; protects vitamins; foods need not be covered. Meter-Miser is simplest cold-making mechanism ever built. Variety of sizes, other models.

Frigidaire Electric Range fits flush to wall. Porcelain finish inside and out; chromium trim. Sturdy, fast-heating Radiantube Units; complete selection of cooking speeds. Big oven; heating elements top and bottom. Waist-high broiler. Thermizer (deep-well) cooker. Lighted signals, automatic controls. Choice of models.

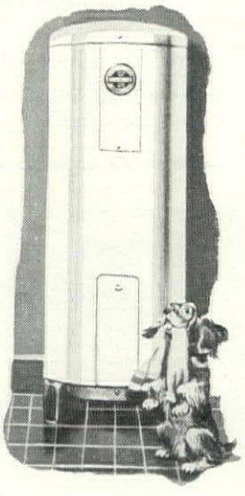
Frigidaire Kitchen Cabinets—all-steel, white Dulux finish—and Frigidaire Sinks. Combine with Frigidaire appliances to form easily-installed Kitchen Efficiency Centers.





Two Types of Home Freezers. Chest type (illustrated) in 4 cu. ft., 8 cu. ft. capacities; counter-balanced lid. Upright type matches refrigerator, has three interior compartments with individual doors; 5.1 cu. ft. (157 lbs.) capacity. All models have Meter-Miser mechanism, "use-tested" in millions of homes.

Choice of Water Heaters. Table-top type (30 gal.) to go with Frigidaire Range. Round tank models, 32-80 gal. capacity. Sickle-shaped Radiantube Unit flexes off scale formation; special baffles prevent diluting of hot water with cold.



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Fire is always looking for a place to happen

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There are many reasons, in addition to their noncombustibility, why these unique fabrics are winning the preference of architects and builders from coast to coast. Used as curtains, wall and ceiling coverings and scenery, as well as for draperies, they are truly decorative. Being colorful and made in a wide variety of appropriate patterns, they blend with virtually every decorative motif.

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Write for new booklet—"Design for Safety": Owens-Corning Fiberglas Corporation, Dept. 830, Toledo, O. Branches in principal cities.

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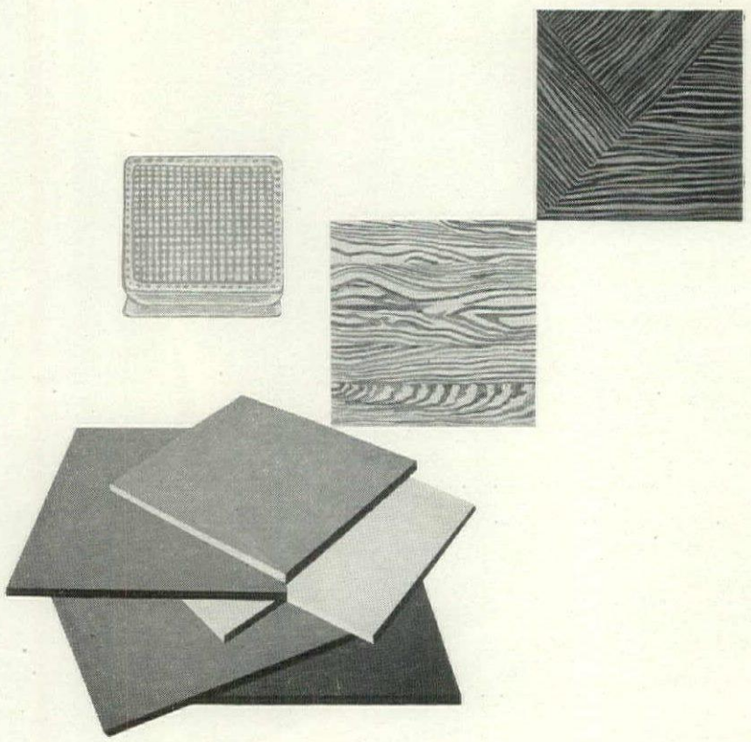
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getting down on all floors

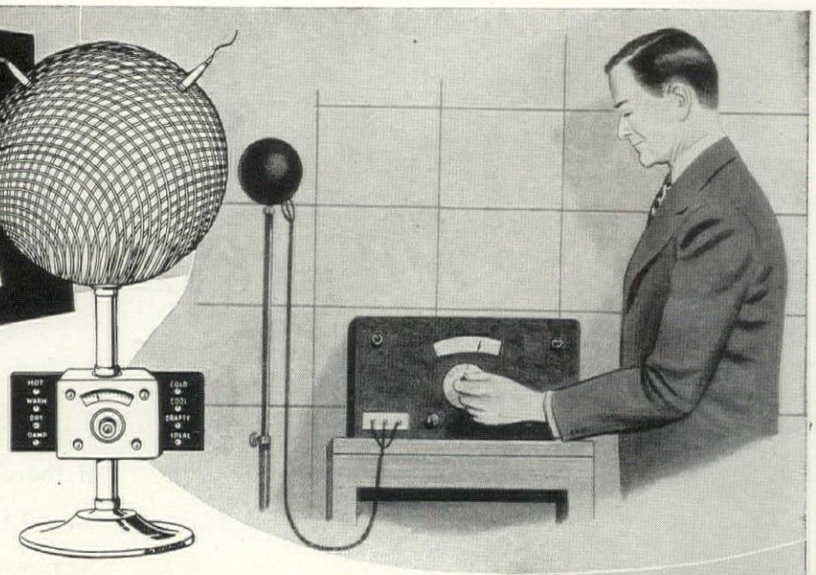
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BLUEPRINTS FOR TOMORROW

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"ROBERTA" Reacts to Sunshine IN A SNOWSTORM



How the Modern Miracle of Electronics Helps Trane Create Better Weather Magic . . .

"Roberta," the human-comfort meter, is one of the prima donnas of the Trane Laboratories. And she certainly deserves the title. She's so sensitive that she'll record the heat of the sun during a snowstorm. Or react to the air motion created by a wave of the hand. She measures the factors that affect human comfort better than the human body itself and then proceeds to record them accurately and completely.

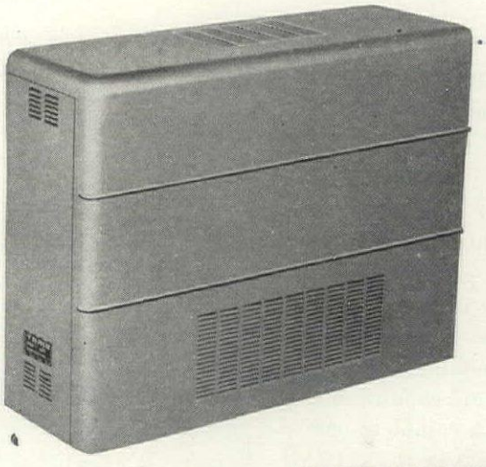
When Trane engineers in the development of new heating systems wanted to know just what made a person comfortable they had two alternatives. They could take a score of human guinea pigs and subject them to all kinds of heat, wind and sun effects or they could turn to electronics and make a machine that would do the same thing. They did the latter and created "Roberta," the Eupatheometer.

"Roberta" is not for sale. She has too many jobs to do in Trane laboratories. Jobs such as testing the effect of cold walls in warm rooms and finding out what's comfortable about radiant heat, convected heat, and conducted heat.

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More than 200 Trane field engineers in principal cities all over the country cooperate with architects, engineers, and contractors in the application of Trane systems. National advertising is advising customers to secure Trane information from architect, engineer, or contractor.

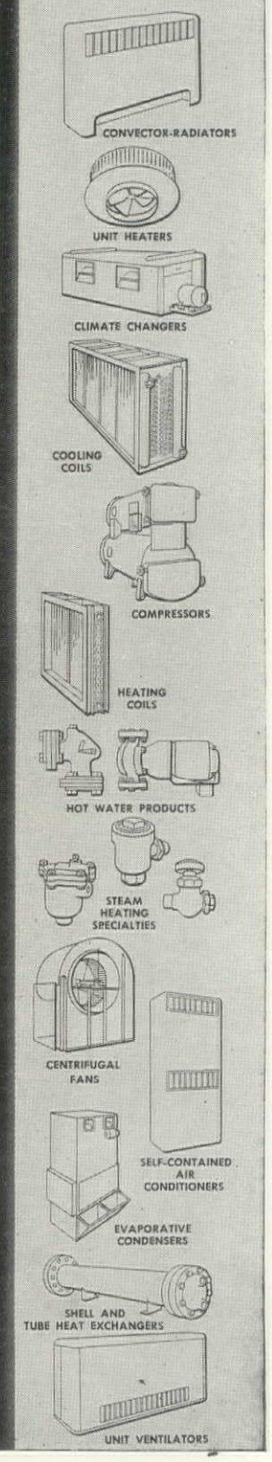
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MANUFACTURING ENGINEERS OF HEATING AND AIR CONDITIONING EQUIPMENT

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"It's such a handy, compact kitchen! Everything within reach . . . and plenty of cabinet and counter space. So cheerful, I'd really enjoy *working there!"*

"I've had a Gas refrigerator for years and never had a day's trouble! It's absolutely noiseless. And these new Gas refrigerators are so conveniently arranged you don't have to waste time looking for things!"

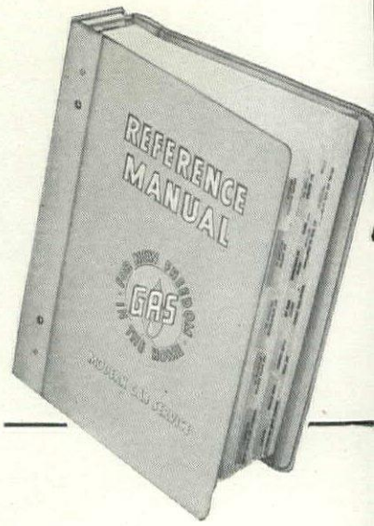
"What I wouldn't give for a dishwasher sink like that—particularly if I had one of those automatic Gas water-heaters—so I'd never have to worry about getting enough *hot water."*

"An adjoining laundry is a mighty smart idea! Particularly if it has one of those wonderful automatic Gas laundry dryers I've heard so much about."

"That streamlined, automatic Gas range is just what I want! Flame-cookery is so much better and faster—and Gas equipment costs less to run, too!"

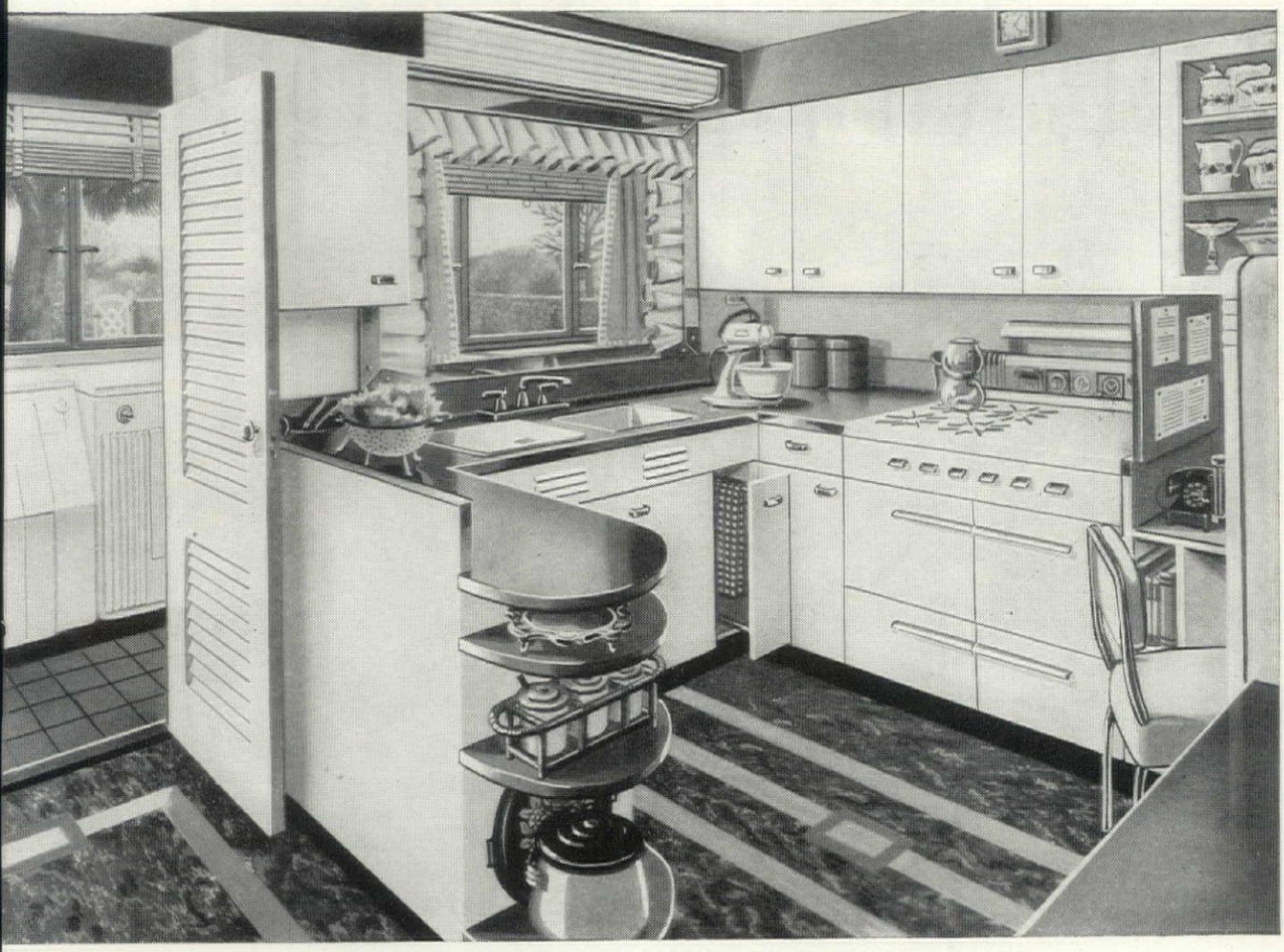
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NOW READY *For further information on this invaluable builders' and architects' manual, write: American Gas Association, 420 Lexington Ave., New York 17, N.Y.*

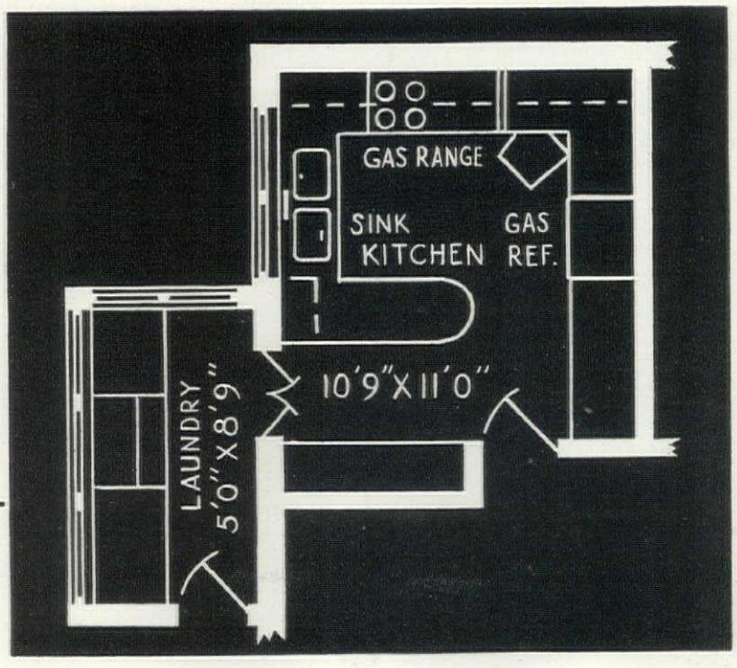
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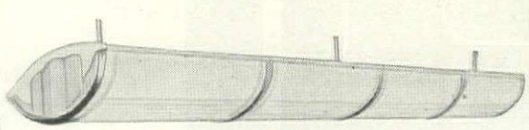
Over-ALL Lighting

by Wakefield



Let the Wakefield STAR provide a "sky" of easy-eye light!

This brand new lighting unit began with your problems. Designed by Wakefield, then clinic-tested and re-designed *by users.* Result: Good lighting, simple, sturdy construction, easy maintenance. Gives you all the advantages of fluorescent and of indirect lighting. Proved Plaskon shielding. Brightness blended to the ceiling for greater eye-comfort plus pleasing Over-ALL light. Unusually simple to handle and clean; just slide out Plaskon reflector section. No need to take unit apart for re-lamping or maintenance. The ideal in lighting equipment for Over-ALL lighting in office, drafting room or school!



It's new—THE WAKEFIELD STAR

. . . a new approach to office lighting

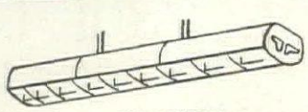
Specifically designed for eyesight protection, Wakefield's new approach to office and drafting room lighting—Over-ALL lighting—provides smooth, pleasing, diffused light *over all.* It provides the kind of light that eyes need to guard against strain, that helps reduce errors and that makes for more cheerful interiors.

And we think you'll find this new lighting system has it *over* all others when it comes to modern beauty, comfort and efficiency. Because Wakefield Over-ALL lighting is based on results where they count—*at the working plane.* Ask your local Wakefield distributor about the new Over-ALL lighting. Or write for our new Catalog No. 46 which gives full details on Wakefield equipment for "Over-ALL Lighting." The F. W. Wakefield Brass Company, Vermilion, Ohio.

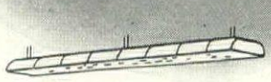
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WAKEFIELD

LIGHTING EQUIPMENT FOR OFFICE, SCHOOL AND DRAFTING ROOM



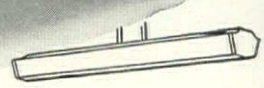
THE GENERAL



THE GRENADIER

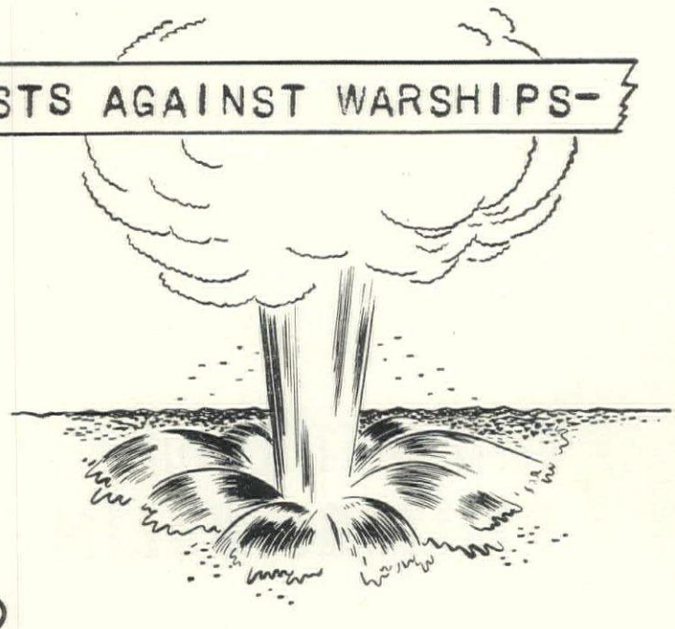


THE COMMODORE



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PLAN ATOM TESTS AGAINST WARSHIPS–





But proper classroom air conditions are vastly more important to the school child

In any school construction program — whether it involves new buildings or modernization — classroom ventilation always receives a great deal of consideration. This is but natural, for Architects, School Authorities and Scientists are all agreed that nothing is more important to the health of the school child than proper classroom air conditions.

There's a common sense approach to the classroom ventilating problem. That is to ask this simple question, "What equipment has proved . . . not only in theory but in actual usage . . . that it will provide proper classroom air conditions?"

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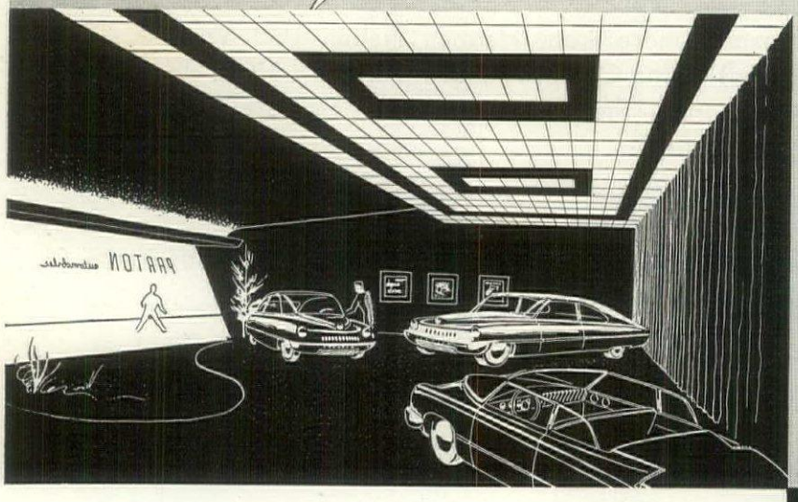
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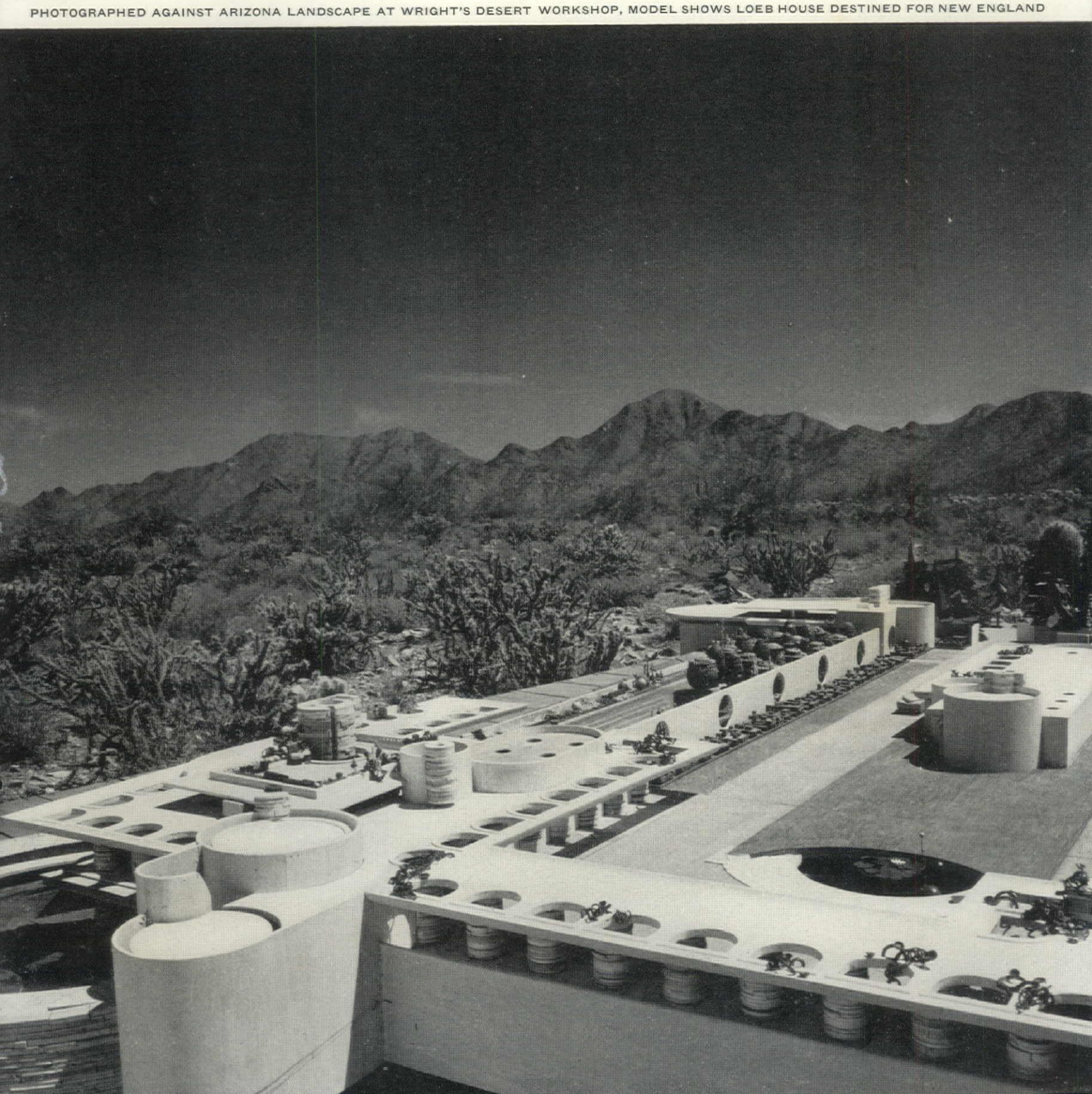
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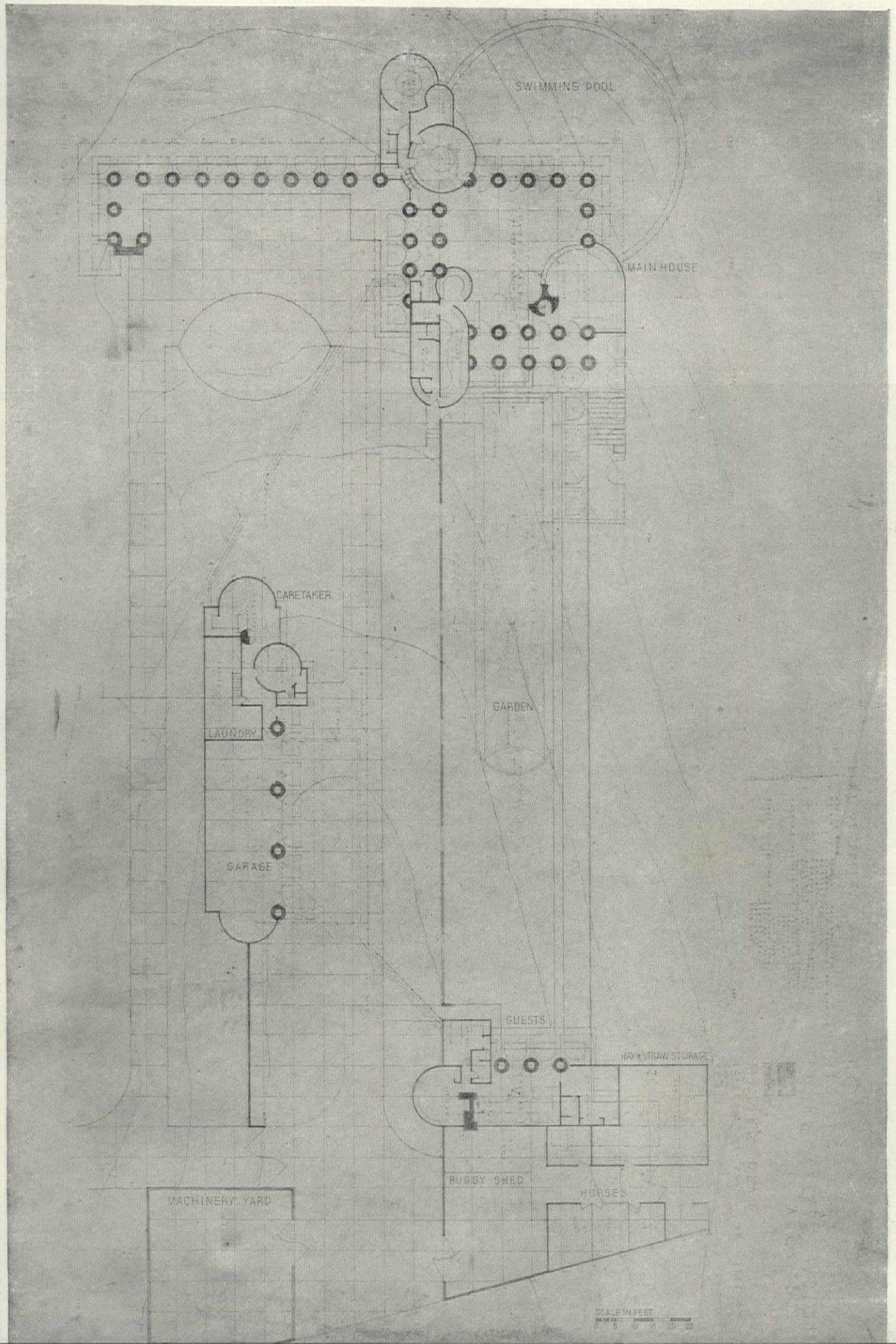
PHOTOGRAPHED AGAINST ARIZONA LANDSCAPE AT WRIGHT'S DESERT WORKSHOP, MODEL SHOWS LOEB HOUSE DESTINED FOR NEW ENGLAND



HOUSE IN CONNECTICUT

Frank Lloyd Wright transforms a barren hilltop into a Yankee Shangri-la, creating a site for Gerald Loeb's future residence where none existed before.

PLAN COMBINES HOUSE, MOTOR COURT, GARDEN AND SUBSIDIARY STRUCTURES INTO AN ARCHITECTURAL ENTITY



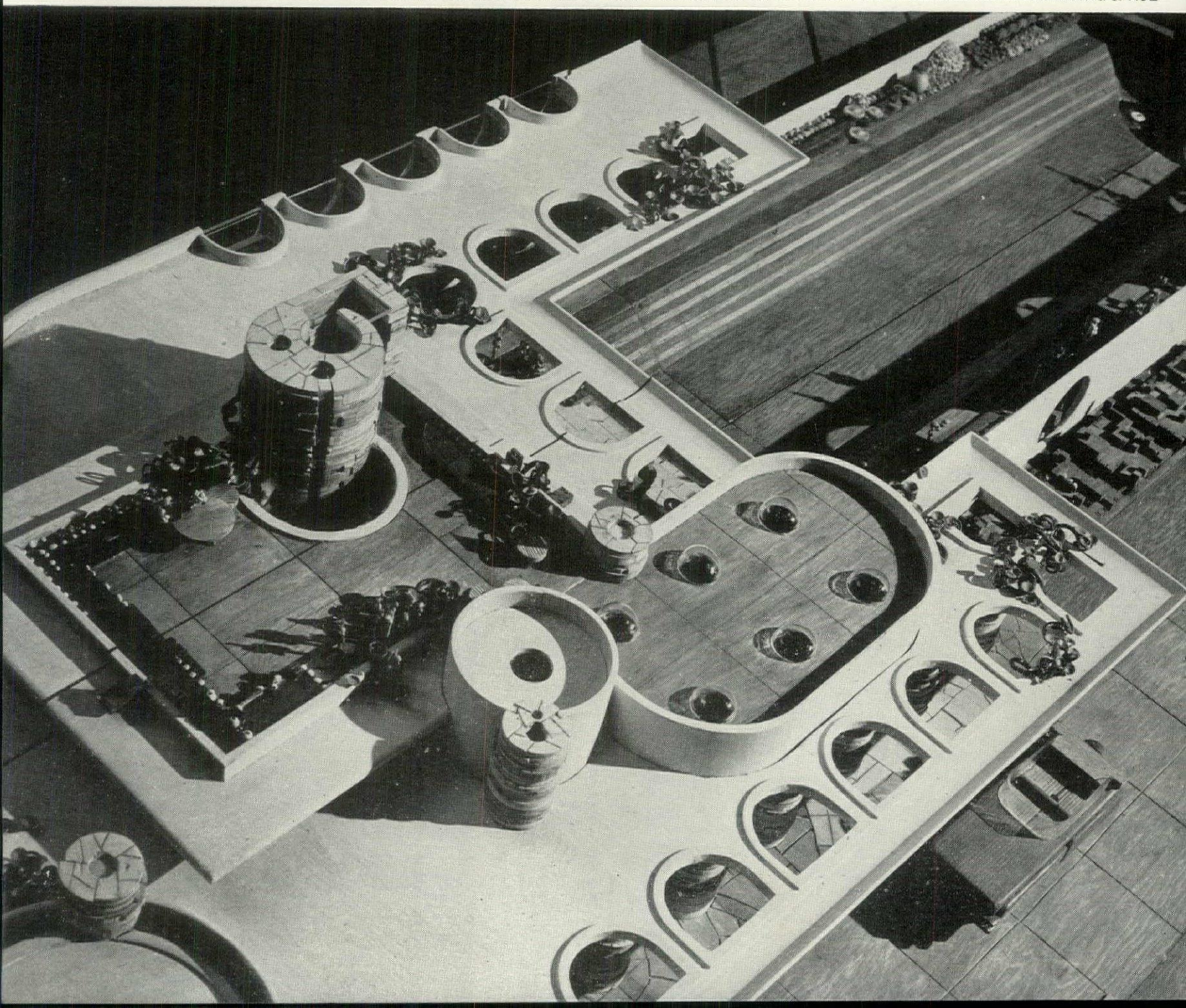
LIKE most of his accomplishments, Frank Lloyd Wright's conquest of the eastern seaboard has been sweeping. A short while back his brilliant design for the Guggenheim Museum of Non-Objective Art left blasé New Yorkers goggle-eyed. Now, for the region of spinning wheels and calico, he has dreamed up an equally audacious house. In it, some of the devices first used in the Museum reappear, such as circular, domed skylights, floor slabs turned up at the edges to form parapet walls, and, in general, bold use of circular shapes. Despite these similarities, the designs are as different in basic conception and over-all effect as two works by the same artist can possibly be.

Many who admired the Museum for its light, pure structure and simple, unadorned curves will detest this house for its massive stonework and prolific mingling of shapes and materials. Admirers of the slender, springing columns of the Johnson Wax factory are bound to find the ponderous stone drums which here serve the same function a contradiction hard to resolve. Such criticism, however, ignores the fact that it is in this very inconsistency that Wright's genius is rooted. As an expression of a larger inconsistency—the unresolved conflict between romanticism and science in the art of building—it is merely the declaration of independence of the creative artist who refuses to be bound by the limitations of his time. As one of Wright's severest critics has put it, his work—with all of its maddening changes of pace—is, at worst, challenging, at best, sublime. And the question of which category this particular job belongs in depends on which horn of the over-all dilemma one happens to be impaled.

Probably the ultimate in bachelors' retreats, the plan of the house and its gardens has about it a formal serenity that approaches the majesty of an oriental temple. Shrubbery and other planting are treated as objectively as though they were building materials. The main house itself is an equally abstract study of curves and angles. The plan is obviously laid out for group entertainment on an impressive scale with little regard for private, informal living. The two round, windowless bedrooms receive their only daylight through a narrow, circular skylight around the perimeter of the roof. Except for the characteristic clerestories over the living room in the main house and the gallery in the guest house, interior lighting elsewhere is also through roof apertures, round or semi-circular in form. One exception is the library where wall and roof are deeply scalloped, creating corner windows between wall and ceiling.

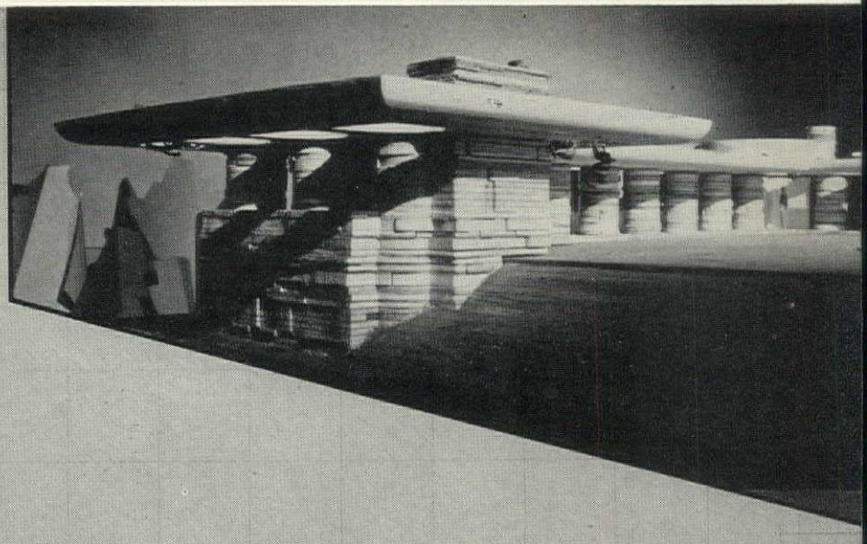
Integration of house and site, a favorite editorial phrase, cannot even be mentioned in this case since the two are actually one. Since the land drops off rather steeply beyond the living room, the high cut stone foundations surmounted by thick columns along the colonnade side gives the house a fortress-like quality which accentuates the artificial "landscape" of which the house, and the various other structures are all integral parts. Servants' quarters have been divided up so that each servant lives immediately adjacent to his working area, a convenience for all concerned. Consistent with the luxury of the house and grounds, a spacious stable and courtyard are located at the rear of the guest house, well hidden from the rest of the property.

AIR VIEW SHOWS COMPLEX ROOF STRUCTURE, UNIQUE METHOD OF LIGHTING INTERIOR. DECK IS SOLE SECLUDED OUTDOOR LIVING SPACE

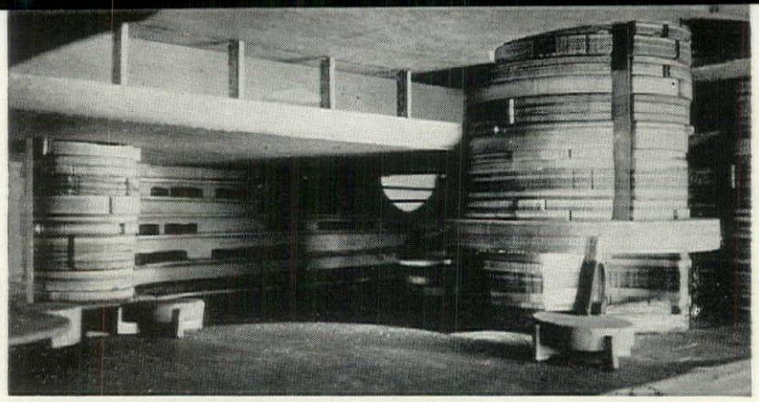


NIGHT VIEW ACROSS SWIMMING POOL REVEALS AN EXOTIC SUBMARINE GARDEN BETWEEN COLUMN BASES BELOW FLOOR OF LIVING ROOM

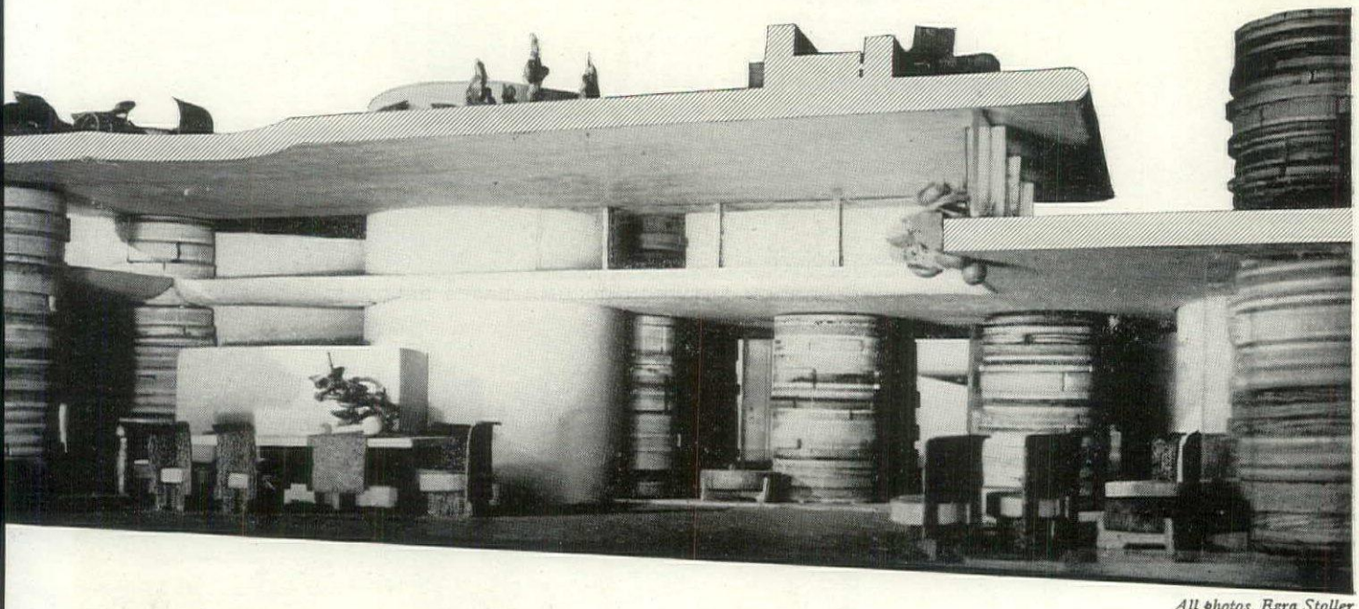
CANTILEVERED CONCRETE ROOF, TYPICAL OF WRIGHT'S DESIGNS, ACCENTUATES MASSIVENESS OF CUT STONE FOUNDATION AND DRUMS



MODEL, which splits lengthwise to reveal interior of main residence and guest house, was executed in great detail for exhibition purposes. In this sectionalized view, Wright's genius for handling interior space is apparent. Although walls do exist they are unnoticeable. Concrete cylinder at center encloses a buffet.

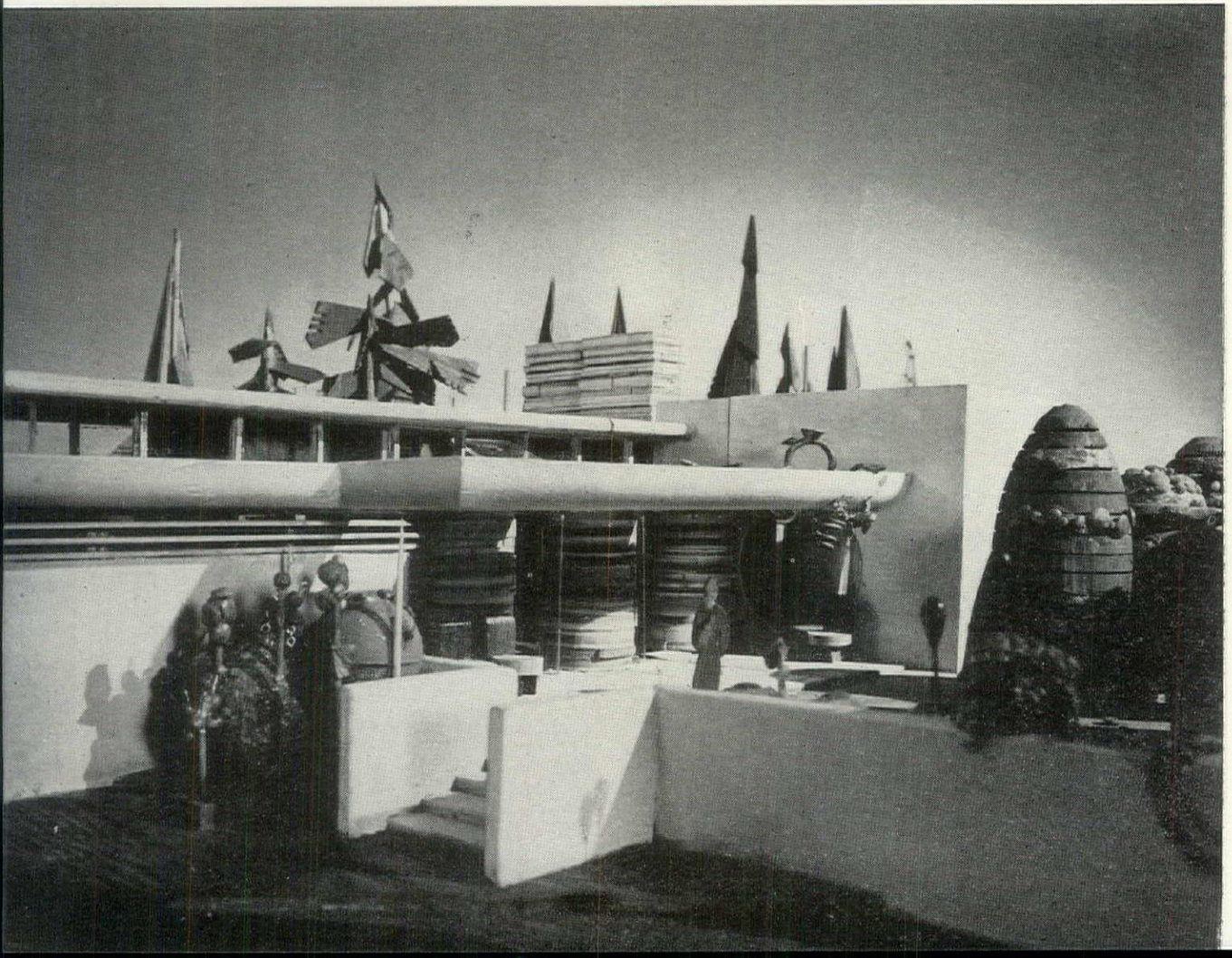


LIBRARY CHIMNEY HOUSES TWO FIREPLACES, A SPIRAL STAIR TO ROOF



All photos, Ezra Stoller

GUEST HOUSE REPEATS MASONRY OF MAIN RESIDENCE ONLY IN ITS CHIMNEY AND THREE ENTRANCE COLUMNS

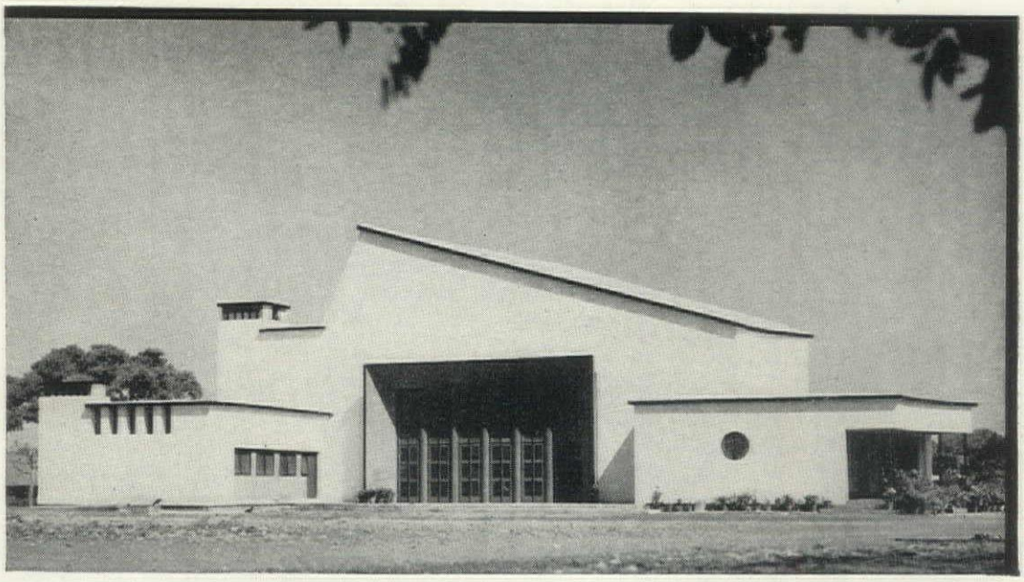


UNIVERSITY BUILDING

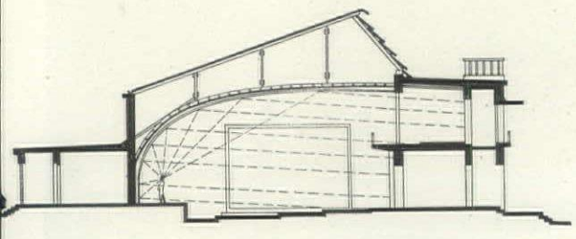
Otto Koenigsberger and N. B. Bhatt design a modern auditorium for the Indian Institute of Science.

The lack of industrial facilities plus increased wartime stringency has to a great extent excluded contemporary building from the south of India. Occasionally, however, the modern idiom is attempted within the strict limits of available materials and construction methods. Such a building is the dining hall and auditorium shown on this page. Brick, timber, cement, reinforcing rods and glass (the latter three in very small quantities) were the only choices open to the architects. As a substitute for unavailable steel supporting members, timber trusses were developed in varying spans and heights, forming a frame for the large auditorium. In combination with a parabolic ceiling, the trusses are responsible for the exterior shape of the building.

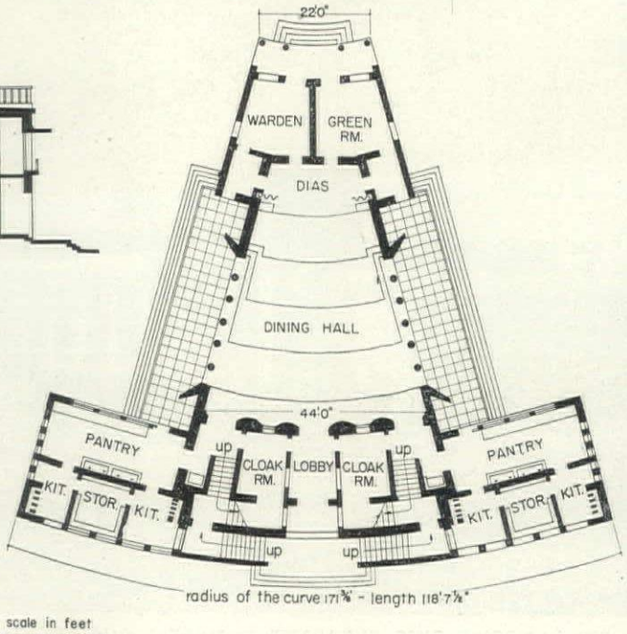
The main problem set before the architects was to design a dining hall for 120 students which could also be used as an auditorium



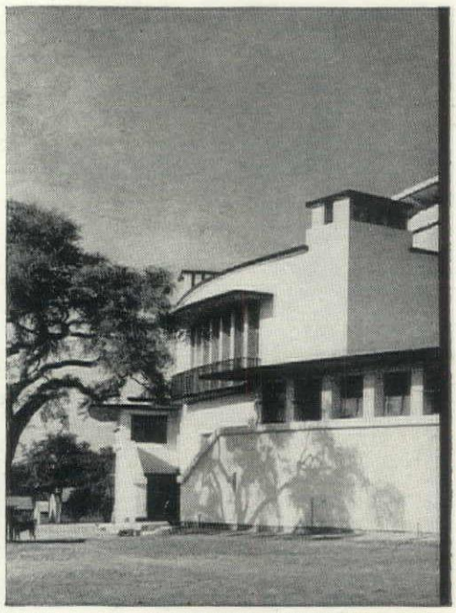
MAIN ENTRANCE LEADS DIRECTLY TO THE LARGE CENTRAL DINING HALL-AUDITORIUM



AUDITORIUM CEILING is curved behind stage to reflect sound deep into the theater. It is suspended from wooden trusses.



T-SHAPED PLAN emphasizes double function of main hall with kitchen space grouped in front wings, theatrical facilities at rear of stage.



REAR VIEW SHOWS MEZZANINE BALCONY

accommodating 300 persons. Acoustical treatment had to be such that lecturers, instrumental soloists and singers could be heard without the aid of a microphone. These requirements led to a segment-shaped plan with a balcony for additional seating, and to the parabolic teakwood ceiling which directs sound toward the audience. In addition, the rear wall is "dissolved" with the help of openings and convex piers to reduce undesirable reflections.

Another specialized problem was the necessity of catering to students from different provinces in regard to food. The solution: separate vegetarian and non-vegetarian kitchens located in opposite wings.

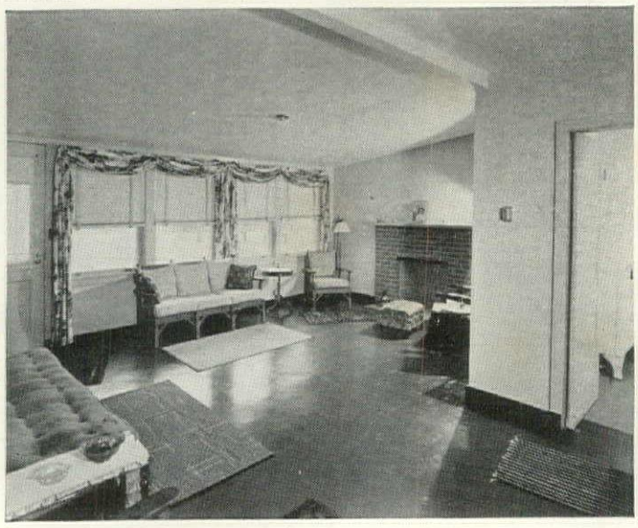
The dining hall-auditorium is the first step in a new building group which will ultimately include a laboratory and offices surrounding a rectangular landscaped patio.

SOUTH WING OPENS ONTO PLANTED TERRACE SHADED BY A CANTILEVERED ROOF



LOW ROOFS, WIDE EAVES, BIG WINDOWS GIVE PLEASANT DOMESTIC QUALITY TO THIS RURAL COMMERCIAL BUILDING

LARGE LIVING ROOM IN CHIEF OPERATOR'S APARTMENT



TRANSOM WINDOWS, SLOPED CEILING VENTILATE ROOM



RURAL TELEPHONE EXCHANGE

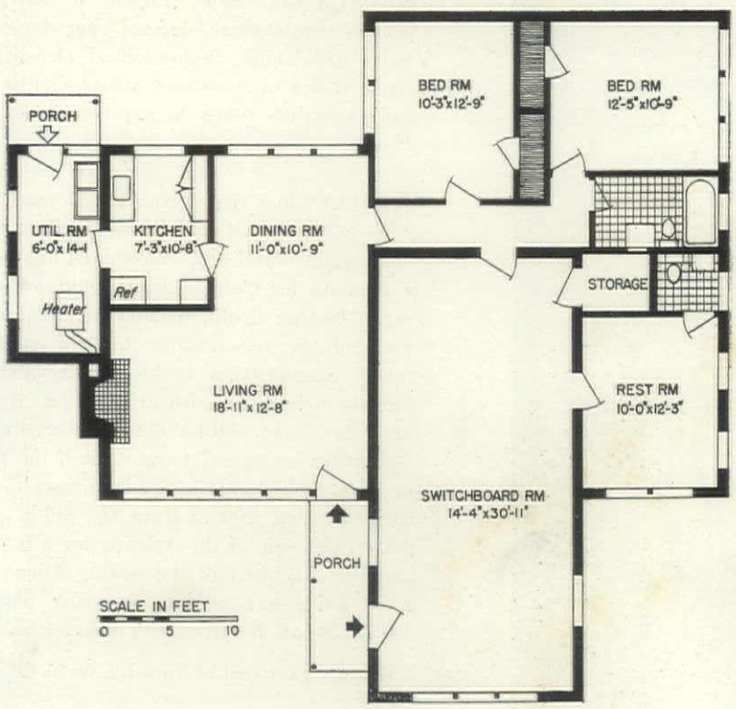
Architect Dano Jackley applies the contemporary residential idiom to a common building type.

When the architect set to work on the design of this rural telephone exchange in Armiger, Md., he could not have had much in the way of organized information. Despite all the jokes about the party line, the literature on the subject of rural exchanges must indeed be scanty. The problem demanded provisions for a switchboard room and office for the daytime operators, and living quarters for the chief operator. The entire project was developed with an eye to pleasing appearance, employe comfort, low initial and maintenance costs. The operator's room is large, well-lighted and acoustically treated. It has its own rest room, toilet and coat room but is connected to chief operator's apartment.

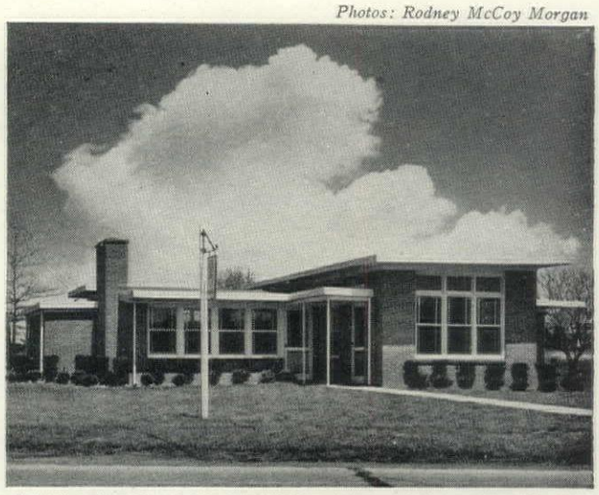
Problems of heating and ventilating have been solved neatly and intelligently. Both living areas and operating room face south, with roof overhangs which admit winter sun and exclude it in summer. Several features of the roof have proved simple but effective aids to summertime comfort. The roof itself has been tilted and the ceiling line follows it. This, together with ceiling-height transom-type windows, prevents stratification of warm air inside the rooms. In addition, it is internally vented, with insulation separated from roof membrane by moving air column. Heating is radiant throughout, with wrought iron coils imbedded in the 4 in. slab on 6 in. gravel fill. The system is in two sections with separate controls and pumps. It is serviced by an oil-fired boiler with aquastat controls set for 130° water. Supply mains follow exterior walls; insulation is stripped between edge of floor slab and footing; these two measures reduce edge loss through the slab to a minimum. The entire system including boiler cost approximately $1.18 per sq. ft. of radiation in 1944.

Construction is of 4 in. cinder block throughout: exterior walls are surfaced in a coral brick, interior walls and ceilings are plastered. All floors are surfaced in asphalt tile applied directly to concrete slab.

CONSTRUCTION OUTLINE: STRUCTURE: Exterior walls—brick, cinder block, furring, Vaporseal lath, Celotex Co.; plaster, U. S. Gypsum Co.; lime, Standard Lime & Stone Co. Floors—gravel, Sisalkraft Co. paper, concrete. ROOFING—Ruberoid Co. and U. S. Gypsum Co. SHEET METAL WORK: Flashing—galvanized steel, Milcor Steel Co. WINDOW GLASS—Lustraglass, American Window Glass Co. FLOOR TILE—David E. Kennedy, Inc. DOORS—Morgan Sash & Door Co. HARDWARE—P. F. Sargent & Co. PAINTS—U. S. Gypsum Co., Pittsburgh Plate Glass Co., National Lead Co. ELECTRICAL WIRING—General Electric Co. and Youngstown Sheet & Tube Co. Fixtures—Chester Snyder & Associates. PLUMBING FIXTURES—American Radiator-Standard Sanitary Corp. and Kohler Co. HEATING EQUIPMENT—National Radiator Co., Gilbert & Barker Mfg. Co., A. M. Byers Co., Minneapolis-Honeywell Regulator Co., Pratt & Cadey Co., Bell & Gossett Co. Water heater—Taco Heaters, Inc.



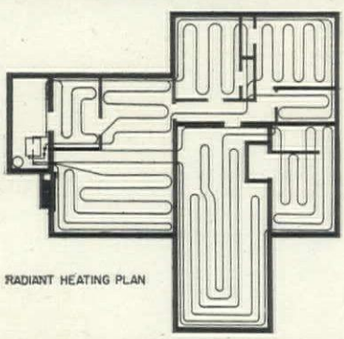
Photos: Rodney McCoy Morgan



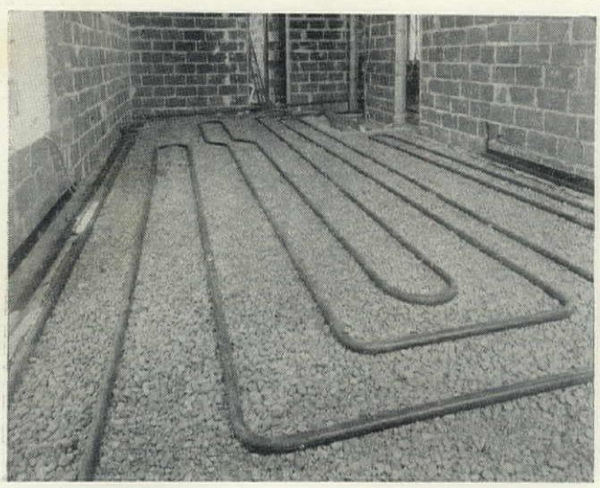
MAIN ELEVATION IS TRIM AND WELL ORGANIZED

OPERATIONS ROOM AFFORDS YEAR-ROUND COMFORT





HEATING PIPES ARE SPACED 15 IN. ON CENTERS



NEPTUNE WITH A CHISE

Torkel Korling



Carl Milles, the white-haired, sweet-faced 70-year-old Swedish sculptor, who has recently become an American citizen, is one of the few artists to enjoy both critical and monetary success during his own lifetime. His vigorous monumental figures, leavened as they are with a touch of trollish Scandinavian fantasy, have inspired five books and innumerable magazine and newspaper articles; have won for their creator prizes, honorary degrees and orders ranging from the Swedish Order of the North Star to France's coveted Commander of the Legion of Honor. Best known for his giant fountains, Milles has seen them erected in the towns and villages of Sweden and in some of the largest cities of the United States, where they project an almost incongruous vitality and humor into America's commercial thoroughfares. William Lyon Phelps, in presenting him with the honorary degree of Doctor of Humane Letters at Yale University, called him "the greatest designer of fountains since Bernini in the 17th century." Others have acclaimed him as the most competent of living sculptors in the important task of harmonizing sculpture with its architectural setting.

Like any artist of his stature, Milles has, on occasion, found his work the center of a storm of public protest. Shocked conservatives in both this country and in Sweden have labeled his pieces "modernistic, grotesque and immodest." At the opposite pole, the avant garde of modern design considers his sculpture eclectic and the philosophy behind it naive. But not non-existent. It would provide no oil for the troubled waters to say that Milles thinks the former group prudes and the latter fools. On the whole, however, Milles' critics are few and his admirers many. To his present idyllic retreat at Cranbrook Academy of Art (an artistic stratosphere located paradoxically near earth-bound, industrialized Detroit) a constant flow of awe-struck artists, dignitaries and journalists comes to pay homage to the Master.

MILLES first visited America 17 years ago at the request of Holabird and Root, Chicago architectural firm who wanted him to do a fountain for their Michigan Square Building.* George Booth, founder of Cranbrook, pounced on this chance to add another famed Scandinavian to his faculty (which already included Finnish architects Eliel and Eero Saarinen). Milles did not accept until 1931 when he agreed to spend half the year at Cranbrook, returning each summer to his native Sweden. Not until the war did he start put on this side of the Atlantic for a full [illegible] months. A citizen of the world, Milles has loved living and working in many places—Paris, London, Rome, as well as in the roman

* Recently purchased by Time Inc. for its Chicago offices.

he famous Swedish fountain-maker is sculpture's gift to the architectural profession.

tic home he built for himself overlooking picturesque Stockholm harbor near the beginning of its 40-mile archipelago. This estate is like an Italian garden, transplanted to the shores of a northern ocean, and perhaps represents the longing of every Scandinavian for the warmth and lushness of a less rigorous climate. Certainly it is true that, of all the places in which Milles has lived, he thinks most nostalgically of Italy.

But America, too, has been kind to Milles and he does not underestimate that fact. "In Europe," he says, "everyone callss me Mr. Milles, but here it iss alvays Carl from the moment I meet. Isn't it vunderful?"

Many of his friends feel that America has kept Carl young and it is true that he appears almost ageless. With his 70th birthday he is still going strong, still snaring juicy commissions from his younger and more "advanced" competitors His productive capacity is prodigious and he can count to his credit over 100 major works, many of them fountain groups made up of ten or more giant figures. His two chief rivals in the fairly conventional school of sculpture which Milles represents, are Paul Manship and Lee Lawrie, but with Milles' popularity still rising, their's is already on the wane.

UNLIKE most sculptors who create inspired monuments to their own emotions, hoping that someday the work will be bought by a museum or wealthy patron, Milles designs only specific pieces for specific locations. This is one of the reasons why he has been able to live more comfortably than many of his garret-stricken contemporaries. It is also the reason that he is often referred to as an architectural sculptor, a breed of artist nearly obsolete in the 20th century.

The *Architectural Record* of June, 1928 explained his technique in these words: "Milles believes in the maintenance of the most intimate relations between the structural and plastic arts, and assumes that the highest sculpture is necessarily that which is most architectural. Hence the symmetry and rhythm of his work. While his sculpture is highly decorative, he has so contrived to work with his architectural colleagues that it never appears as mere adjunctive, but always as a homogeneous part of the actual structure."

The great bronze doors and altar reliefs done for the Church of the Revelation in Saltsjobaden are an example of this approach. They were contrived in close cooperation with its architect, Ferdinand Bober, and are a truly integral part of the structure. The same is true of his black granite bas reliefs which decorate the facade of the Enskilda Bank in Stockholm, designed by Ivar Tengbom. Milles has done similar work in America, the most outstanding of which are the massive bronze relief doors for the Finance Building of the Harrisburg State Capitol Group.

This integrating of sculpture and background, a task sadly neglected in modern art and architecture, is unquestionably one of Milles' most important accomplishments. His famous fountains are dependent on such an approach, are in fact a higher development of it. And it is as a designer of fountains that Milles makes his most decisive contribution to the art of the period. There is no one in the world today (or else no one has been given the chance to prove it) who can approach Milles in the handling of water as an integral part of a sculptural group. Quite literally he designs with water, weaving the streams and jets among his static figures, handling this elusive medium with the sure touch most sculptors have only with the more submissive clay.

The figures themselves Milles designs in heroic proportions and many of his creations dominate whole communities or even cities. He changes style to suit the setting or the material, and he has worked with a variety of both. Wood, granite and bronze are equally amenable to his skillful handling. His Folkunga Fountain, monument to a legendary Swedish character, Folke Filbyter, and designed for Linkoping, Sweden, is a case in point. The central statue is perfectly adapted to the bronze in which it is cast. In addition, the execution is medieval, giving the feeling that the old Swedish town grew up around the monument rather than the reverse. The Diana fountain, designed for the Rennaissance-inspired Swedish Match Company building is, on the other hand, delicate and elegant. The focal point of an enclosed court, it utilizes the surrounding buildings as a sounding board to intensify the tinkle of its falling water into near-music.

In many of his fountains—as particularly suitable for their watery domain—he portrays water sprites, tritons and naiads, powerful yet fluid in their exaggerated physiques; frisky in their antics. Such a parade is the "Meeting of the Rivers" fountain in St. Louis, whose gay figures represent the confluence of the Mississippi and Missouri Rivers near that city. In direct opposition is the Peace Memorial, designed for the City Hall of St. Paul, Minnesota. Here, Milles chose the brooding and somber figure of an American Indian as his subject, executed it in translucent slabs of Mexican onyx, reaching to a height of 40 feet. The result, spotlighted against a dark hall and contrived so that it turns majestically from side to side, is an awesome and almost overpowering monument.

A POSSIBLE criticism of Milles' architectural treatment is that he depends entirely on materials and techniques of a handicraft civilization, rather than adapting his art to modern structural developments. This, however, is quite in keeping with the character of the man. He never reads a newspaper, is bewildered by war and finds politics "tiring." He does not even look like a person living in a mechanized age, but rather like a 17th century Dutchman who has just stepped out of a painting by Rembrandt. His figure is stocky, his head large and his white hair is cut in the long bob of another era. He wears conservative suits which he has made to order in London; his one hat is a rich black felt with a wide brim. In the winter he often affects, instead of an overcoat, a heavy black cape, reaching to his ankles. Milles' cheeks are pink, his complexion smooth and his expression that of a benign and rather important angel. Only his eyes belie this serenity and sweetness of spirit. They are penetrating and slyly humorous, inducing the uneasy feeling that Milles is looking at one's soul and finding it at best amusing, at worst contemptible.

Andrew Reinhart, suave New York architect, describes this feeling in his first meeting with Milles, now a treasured friend: "He came in the door of my office and just stood there and looked at me. I felt as though he were seeing right through me. It was a little like being confronted by Jesus Christ." People frequently compare Milles to the Almighty. Architect Ralph Walker, another long-time friend of Milles, says: "In him has grown a calm assurance of creation. It's almost like God." Perhaps this atmosphere of sublimity which surrounds Milles and which is heightened rather than diminished by his humor, is responsible for the feeling of uneasiness or hero-worship or both that he inspires in friends and acquaintances. One of Milles' studio assistants at Cranbrook who considers the man an out-and-out genius, has just about summed things up: "I like to be with him for a little while—but he makes me nervous."

Milles cannot help but be conscious to a certain extent of his effect on others and he enjoys this position to the full. He plays the part of a great but simple man with the finesse of a Barrymore and the showmanship of a P. T. Barnum. The fact that he is in reality a famous sculptor who loves both nature and worldly things with an almost childlike appreciation, in no way detracts from this effect. Rather it lends sincerity to his performance.

He loves to spin tales about his childhood and early days in Paris, dominating any conversation with such enthusiasm and wit that his listeners are enchanted. He is naively pleased to be numbered among the friends of European Royalty and tells with obvious glee of his experiences among them. Once he appeared at a formal dinner party, given in his honor by Crown Prince Gustav Adolf of Sweden, wearing the proper tail coat—but

under it an old vest covered with plaster dust. Here is the perfect picture of the great artist: absentminded, unabashed by Royalty, but loved by them for his very artlessness.

In spite of this quality, it must not be thought for a minute that Milles is an innocent lamb, wandering among the wolves of the world. He has the reputation of being an extremely shrewd business man and manages to extract fabulous commissions for his work. Friends rush to his defense on this score, explaining that he always gives more than is called for in the contract, starting with, say eight figures, and becoming so enthralled with his work that he delivers twenty. Thus, any profits he might have garnered go down the drain. Friends also hasten to add that any money he *does* make is spent adding to his collection of statues and paintings which he buys at the rate of nearly one a month and considers more important than food or clothes. It is reassuring to note, however, that there are no overt signs of poverty in the Milles household.

THE Cranbrook home is, in fact, a perfect background for the sculptor and his tiny, thistledown wife, Olga, an Austrian and a court painter before her marriage to Carl. The house is specially paneled in dark, Gothic-looking wood, and furnished with carefully selected pieces from Sweden, Italy and other countries in which they have lived. The dining room particularly bespeaks Carl's origin and his artist's eye. The walls are French gray accented by the soft scarlet of an oval Swedish table adorned during meals with crystal candlesticks, two feet tall. French doors in this room open toward a court surrounded by slender marble pillars and topped with a lattice on which grape vines twine, casting a pleasant shade in summer. Here, the Milles menage (they have no children, but there are always guests) dines on warm summer evenings around a legendary table—a slab from an old Roman column given to Carl by an Italian friend. Visitors are told of the many famous people—Eleanora Duse, Hugh Walpole, the Crown Prince of Sweden to mention only a few—who have eaten at this same table.

But it is the living room which is really Milles' sanctum sanctorum. It is used as the setting for his prized collection of Greek statues—heads, busts and torsos; some whole, some broken—which he has acquired at great financial strain. Milles has carefully arranged his treasures on pedestals of different heights, rigging up special lighting effects to take advantage of every angle. He calls the collection his library, explaining, "Voltaire had 5,000 books, but I learn every day from my Greeks." He will spend hours with an interested listener, examining details of the statues with a flashlight and explaining the secrets of their modeling. Always he ends the dissertation with a piercing glance at his audience and his favorite phrase: "Isn't it vunderful?"

Olga stays in the background while Carl is entertaining guests, but her presence is always felt, even though she doesn't talk much. She wears prim, old-fashioned dresses reaching almost to her ankles and looks as though a strong puff of wind would blow her completely away. Carl would testify that nothing is further from the truth, however, for frail, delicate Olga can be as stubborn as a mule and display a temper which tries even his patient good humor. It is possible that he is just a little bit afraid of her. She has always deferred to him as the artist of the household, but it is fairly evident who wears the pants, if such a vulgar term could be used in connection with this decorous mignonette of a woman. Olga is, of course, an artist in her own right, but refuses ever to exhibit the exquisite gouaches which she turns out. In fact, she is so reticent about her work that she keeps it locked in a special cupboard and often will not show it even to Carl. At such times no amount of pleading can bring forth the desired painting for curious eyes.

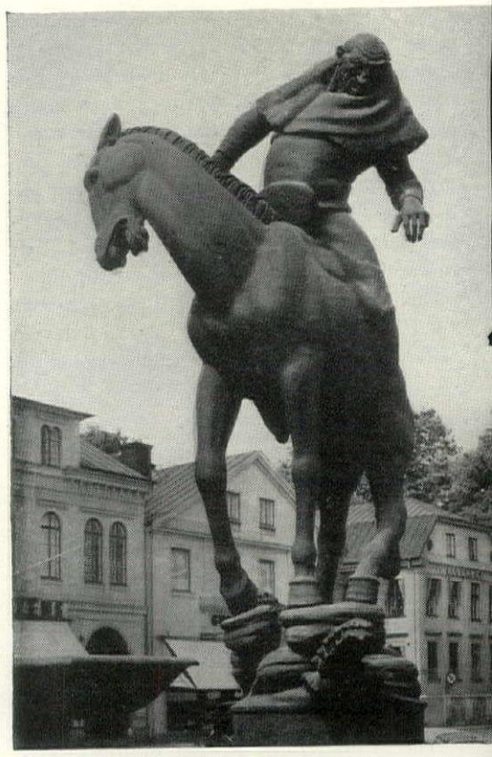
Milles' position at Michigan's famed academy of art is, in itself, ample testimony to his artistry as both a sculptor and a famous man. Here—amid Cranbrook's peaceful trees and lawns; amid the almost romantic architecture created over the years by Eliel Saarinen; amid the petty differences which arise in even this most tranquil of academic communities—Milles enjoys the rank of a minor deity. He calls Cranbrook "my beautiful Sing Sing", but to a less favored artist it might look like a soft touch. Provided with a large studio where he spends most of the day working on his own pieces, he is required to teach no classes whatsoever. Students, working on their own, may ask for criticism of a finished design. But most of their artistic instruction is received through a sort of osmosis at informal evening sessions in the Milles living room where Carl holds forth on art and life and plays classical records from his excellent collection. Milles loves to have a group of young people around him and they, in turn, love to come and listen. This is quite in line with the sculptor's theories on institutions of learning. He is apt to shout: "I hate academies! If the artist duss not teach himself, no von can teach him. The most important thing iss to feel passionately, and this no school can gif." His theory jibes with the best ideas of progressive education, but in the case of Milles, the benevolent critic may be just a bit too overpowering a personality. Impressionable students are apt to produce work strikingly similar in style to that done by Carl Milles.

Sculpture by Milles does indeed have a peculiar and easily recognizable stamp in spite of the fact that he borrows cheerfully from Gothic, Rennaissance or Classical prototypes according to the setting and subject matter of his work. But the strongest strain and the most consistent is Swedish, reflecting the temperament of his native land in its qualities of homeliness and energetic strength coupled with the sly humor and stark tragedy of folk legends. This combination of monumentality

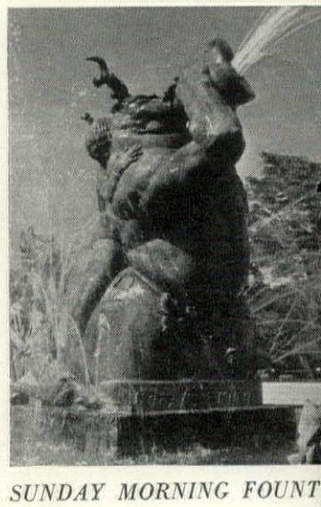
(Continued on page 96)



SEA GOD STATUE, overlooking Stockholm Harbor, 1913 (Wide World photo



FOLKE FILBYTER, central figure of the Folkunga Fountain, Linkoping, 1924-27



SUNDAY MORNING FOUNT Ann Arbor, Mich., 1940



ORPHEUS FOUNTAIN at entrance to Concert Hall, Stockholm; started in 1926, erected 1936



MEETING OF THE RIVERS FOUNTAIN opposite Union Station, St. Louis, Mo., 1936-40. Detail (above) is a water sprite from Mississippi's retinue



and fantasy seems perhaps contradictory, but is in truth an expression of the Swedish character: a peasant stolidity tempered by deep northern mysticism.

CARL Emil Anderson Milles was born in Lagga near Uppsala, Sweden on one of his country's best-loved holidays—midsummer eve—the day set aside by Scandinavians for a celebration of sun and nature. He was the eldest son and second child of Lieutenant Emil Anderson, nicknamed "Milles" when he served in the French Army during the Franco-Prussian war. This name was later adopted by the whole family because there were so many Andersons in their small town.

Carl's childhood was punctuated with one unhappy experience after another. A sickly, sensitive youngster, he seems to have suffered an overdose of military discipline from his stern father. Like Leonardo da Vinci, he took refuge in nature, wandering by himself among the woods and streams near Lagga. His first tutor did not help matters much. Never realizing that fear and boredom were hampering the child's development, he made Lt. Milles believe that his son was dull and stupid. At this crucial point, when Carl was four years old, his mother died and the stepmother who soon came into the household was unable to iron out the difficulties.

Carl's first taste of freedom came at the age of ten when he was sent to the Jacob School in Stockholm, living in a boarding house away from the strict scrutiny of his family. Here he spent every available second at the waterfront, watching the shipping and dreaming of trips to far off lands. To cover up for him when he played hookey, he used to bribe his schoolmates with whiskey and snuff given to him by his sailor friends. The climax of these days of glory was an attempt to sign on as cabin boy, but he was detected by an irate father and sent ignominiously back to school for another year.

At the age of 17 this unmanageable young man was hustled into apprenticeship to a cabinet-maker, and began attending evening classes in carving and woodworking at the Technical School in Stockholm. He became so expert that he was finally allowed to leave the shop and take a full-time course of study during the day. Whisking through the three-year course in a year and a half, he capped this record by winning a prize of 200 kroner (about fifty dollars) as the best student in the graduating class. Milles describes this prize as the turning point in his political thinking. At fourteen he was a socialist, but when he won this first fifty dollars he became a staunch capitalist and has remained one ever since. With this untold wealth he eagerly planned to visit every country in the world, finally hit upon the specific plan of joining a friend of his father's in South America to teach Swedish gymnastics.

Young Milles, however, got no farther than Paris. Arriving for a day's stopover enroute to Marseilles, he remained for seven years, too terrified at his unorthodox change of plan to let either his family or his gymnastic friend know of it. To earn a living, he waited on table in restaurants and hotels and worked as assistant to a coffin-maker. This was a particular windfall because his master kindly allowed him to sleep in one of the extra coffins at night. But his favorite job was as part of a clacque at the Paris Opera House which enabled him to hear the music which has always been an essential part of his living. He got fired, finally, when he could no longer stomach clapping for a particularly offensive soprano.

During this time, Milles continued studying and modeling in his rare free hours and at the end of two years his work was admitted to the Salon. One of his groups, however, was rejected. A few days later a fat little man with a long beard knocked on his door and asked to see the sculptor, Carl Milles, saying that he had fought to have the group included. They chatted for a while and finally the stranger asked if Milles would come and carve for him. "But who are you?", asked Milles. "Why, I am Rodin," replied his visitor. It took Milles two years to work up the courage to call on Rodin after this initial visit, and two hours of circling the block before he finally dared knock on the door. After the plunge was taken, however, the two became great friends. Rodin's influence on Milles' work was marked during this period and, in a certain sensuousness of modeling, may still be seen today, although the protegé eventually broke away from Rodin's technique. In so doing he changed his entire approach towards sculpture, striving for the monumentality which he has now achieved and developing the unique style peculiar to his later work.

MILLES' countrymen, from whom he had won resounding approval at the start of his career, did not take kindly to this change in style. One of his first attempts in the new manner—a grotesque water troll and his lovelorn nymph which now stands as a revered monument near Stockholm harbor—was originally hissed by critics and public from Lapland to the Skagerrak. It became almost a national pastime to throw beer bottles at what was considered a travesty on art. Other works received hardly more sympathetic treatment and Milles became so unpopular that storekeepers refused even to wait on him. According to rumor, students at the Royal Academy in Stockholm where Milles had become a professor, actually stoned him out of the place. Says Milles of this treatment: "In Sveden they hated me—that's really vy I came to America—and now they think I'm vunderful. It iss a funny thing."

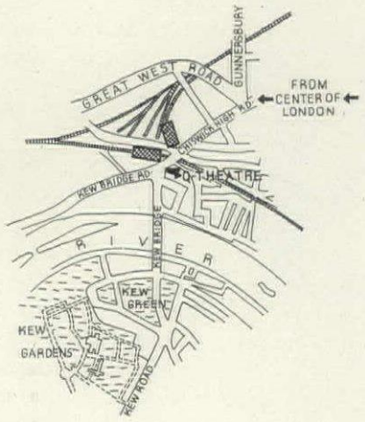
Milles has had some fairly rough times in America, too, although none to compare with the Swedish nightmare. One of his more turbulent passages occurred when preliminary studies for his "Marriage of the Rivers" Fountain in St. Louis were up for approval before the city fathers. The group was deeply perturbed about the nudity of the figures they had commissioned for a public square and Outraged Modesty seized control of the meeting. Two of the more violent commissioners shouted that the undraped and obviously happy figures would cause traffic accidents and teach children naughty things. Milles listened to the furious battle and when it had subsided said quietly, but with a faint twinkle: "Vell, you know, ven your father and mother conceived you, they didn't vear tuxedos . . ."

After a running battle of months' duration, the original nude figures were unveiled, although St. Louis modestly insisted on changing the name of the fountain from "Marriage of the Rivers" to "Meeting of the Rivers." Wags pointed out that this merely made the uniting of the Mississippi and the Missouri Rivers an immoral embrace rather than a nice conventional wedding. Milles himself had the last word at the dedication ceremonies when he intimated that his bride and groom, standing chastely apart, might not remain so all night long. Turning to the statues he cautioned: "To you boys and girls in the pool: Behave well . . . enjoy life, but remember that at every sunrise you have to be here."

Other Americans, less conservative and more profound than the St. Louis congregation have criticized Milles' work from a more valid standpoint. All agree that he is a superb craftsman and as such should receive much credit. But Alfred M. Frankfurter, Editor of *Art News*, has labelled his work "no more than Teutonically cute," and called the man himself a child of nature "only casually in contact with our tempo of civilization." Other art critics have complained that his sculpture lacks depth of feeling, that his stylized figures are tricky and mannered without expressing anything. In comparison with Jacques Lipchitz, fair-haired boy of the modern school, Milles is felt to be superficial and to have failed in a fundamental purpose: the blending of sculptural form with its meaning. Toward such detractors from his worth Milles takes a lofty attitude, remarking: "I am used to adverse criticism. I say, like Haydn did when people didn't like his music, 'I pardon them'."

However aloof Milles may remain from controversy, remarks like these have undoubtedly left a sting which comes out in his violent criticism of the more advanced art forms. As if in direct reprisal, he argues: "The artist should not base his work on philosophy as do the surrealists and abstractionists. He should base it on nature. Then if philosophy comes in a line, in a color, it iss all right. These squares and triangles mean nothing—they are not art!"

It remains, of course, for time to settle this particular dispute. But whatever faults may be found with the Milles technique, there can be no question that as an architectural sculptor he is without peer. And Milles, supremely confident, still turning out an overwhelming quantity of work, concludes: "If I don't get all my statues up in this vorld, I vill take them vith me to Heafen. God vill gif me lots of granite, the angels vill help me carve and I vill make Heafen famous."



COMMUNITY THEATER

Proposed English playhouse has ingenious staging facilities designed for conventional and projected scenery.

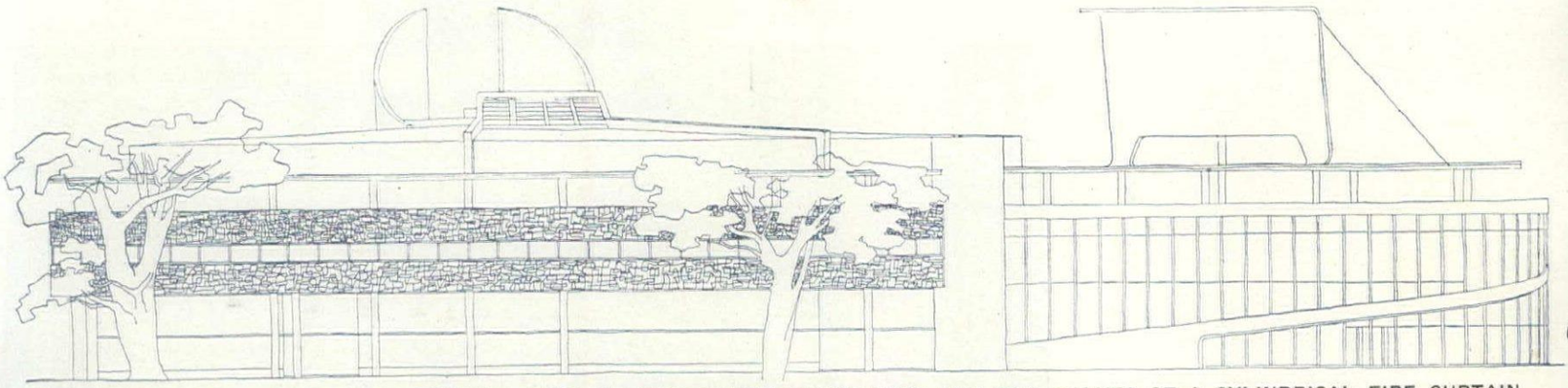
Hermann Herrey, now a registered architect in this country, began this study while practicing in England. In its later stages the project was benefitted from research on community planning done by Mr. Herrey under the sponsorship of the American Philosophical Society.

Periodically the British theater sheds its voluminous cloak of tradition to sponsor a new adventure in the world of drama. Whatever the experiment, it almost invariably turns out to be important, daring and competent. Most English contributions of this century have been limited to acting, direction and production, but with this scheme she makes a bid for top billing in the currently thriving field of theater design.

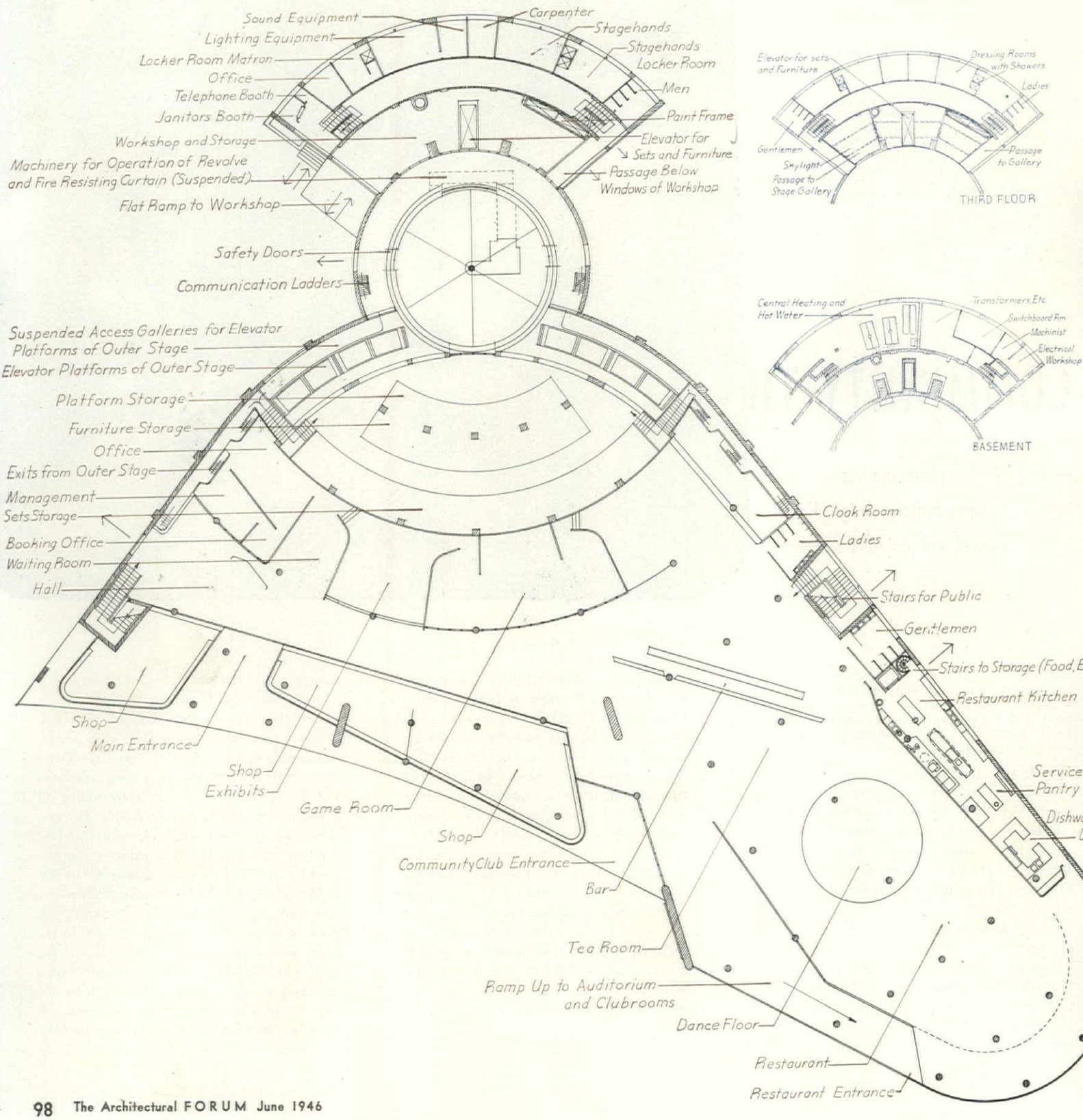
Though it seems ironic that this theater may be built concurrently with Sir Edward Luytens' plush and gold design for the restoration of Covent Garden, it is nevertheless an indication of a broad outlook which respects young blood and staid tradition for their respective merits. Jack and Beatrice de Leon, founders and owners of the Q theater are among the few artist-managers who successfully combine art and imagination with sound judgement and hard headed business acumen. By 1939 their existing headquarters, a remodeled suburban dance hall, had proved mechanically incapable of keeping pace with modern staging techniques, building codes and licensing requirements. This parti, the third worked out by the architect, proposes an entirely new building, displacing two preceding projects, one of which retained some of the old theater.

Located in a select residential neighborhood near Kew Gardens, the theater has a loyal and enthusiastic local following which constitutes most of its patronage. For this reason it has been designed as a combination playhouse and community center. Actually, Q theater is to London's West End dramatic center what New Haven or Philadelphia is to Broadway. There, new plays are produced, reviewed and, fortune permitting, sold—script, cast and scenery as a unit. The repertory consists mainly of contemporary native, American and European drama with a sprinkling of musicals and Shakespearean revivals. Because of the rapid turnover and wide variety of productions staged at the Q, a primary requirement for the building was maximum flexibility.

The site is roughly triangular flanked by a built-up street. However, the Chiswick High Road, a main artery leading directly to the heart of London, passes its apex, curving slightly at this point to make the theater visible from two directions. The building will be surmounted by a huge movie screen on which will be projected advance billings or excerpts from current plays.



FLINT STONE IS USED AS WALL FACING. WINGLIKE PROJECTIONS ABOVE ROOF ARE TWO HALVES OF A CYLINDRICAL FIRE CURTAIN



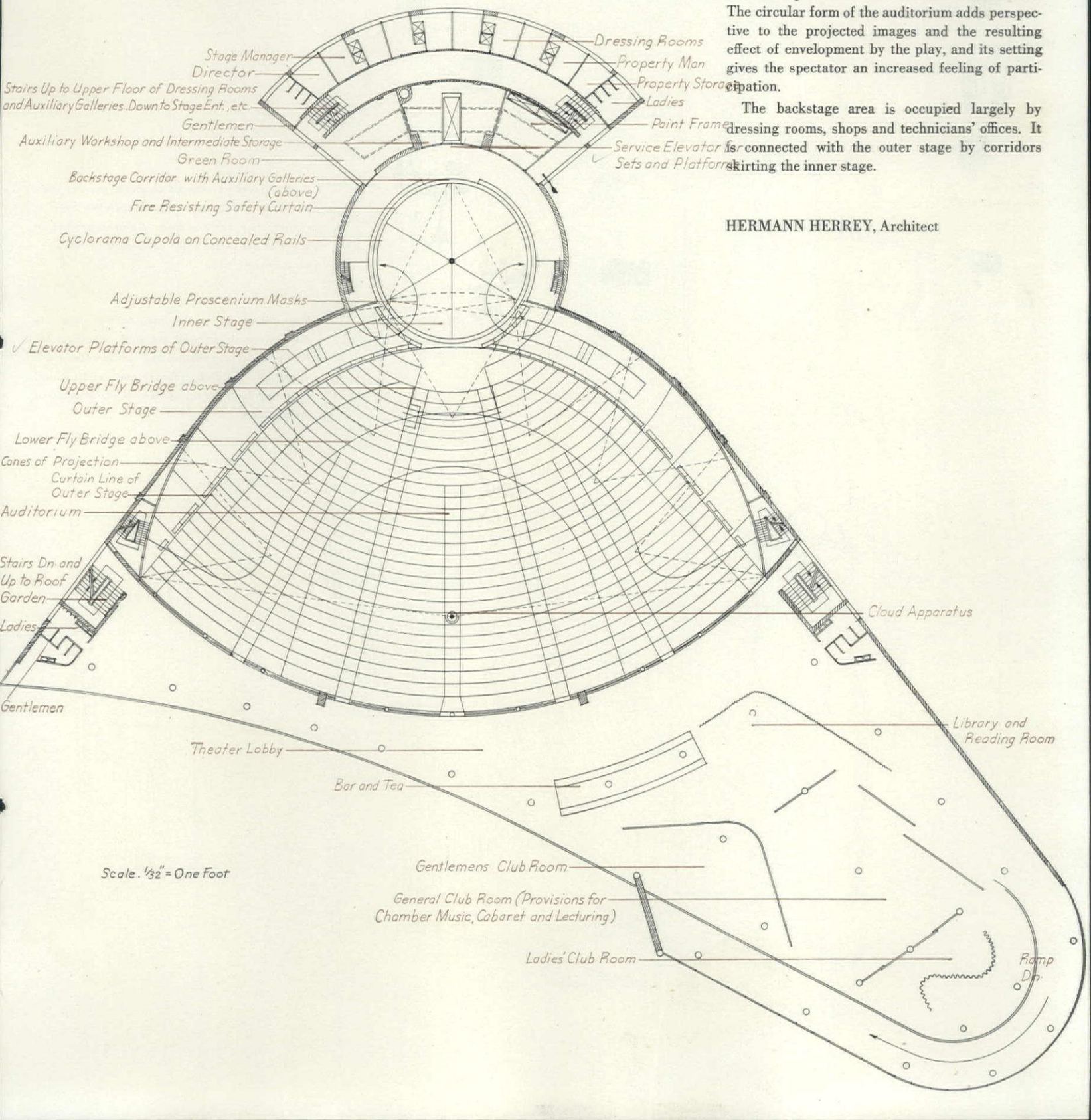
A dearth of recreational facilities in the neighborhood was largely responsible for the architect's conception of a dual playhouse and community center. Even in the inadequate existing building a variety of community activities had sprung up and developed to a point where their need for proper facilities could no longer be ignored. The plan makes no particular division of the building's two functions. On the ground floor service facilities are ranged along the diagonal righthand wall. The sheltered main entrance, flanked by shops, is located off-center in the facade. A secondary entrance to the right of it directly adjoins a ramp leading to the second floor club rooms and auditorium. The lobby, a spacious, flexible area of irregular shape, incorporates a bar, tea room, dance floor and orchestra stand as well as restaurant. Location of these facilities in the center of the floor rather than along the walls permits circulation around and between them, retaining a feeling of openness. Facing the main entrance are the ticket booths and manager's office, also a lounge, game and exhibition rooms for use during intermission or for non-theatrical events. The space corresponding to the auditorium and stages above is mostly occupied by mechanical equipment and storage facilities. The farthest point to which the public may penetrate on this level is the cloak room in the rear right hand corner of the lobby.

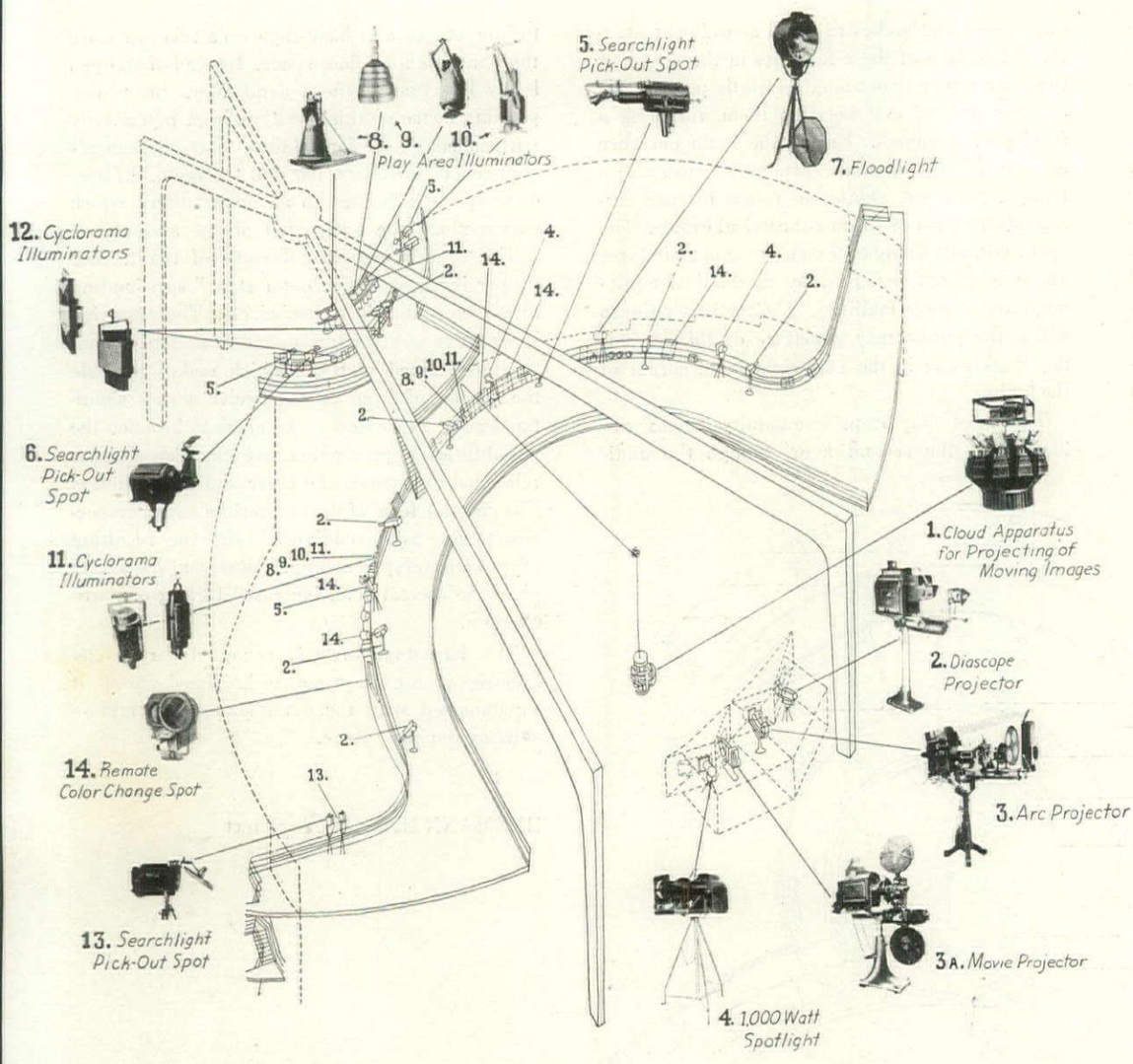
The most important community rooms are located on the second floor, though the auditorium, stages and backstage area take up more than half the total floor space. Instead of an open lobby like that of the ground floor, the corresponding space on this level has been ingeniously partitioned off to form ladies' and gentlemen's club rooms, a library, bar and tea room. Promenade space is limited to an open gallery which curves along the outer wall of the auditorium.

The most spectacular feature of the theater proper is its so-called "outer stage" surrounding the seating area in a semi-circle. The revolving inner stage is in reality an articulated two-story, twelve-sectioned platform which makes possible the setting of from one to twelve scenes simultaneously. These devices do much to broaden the possibilities of production and establish a closer relationship between the actor and his audience. The circular form of the auditorium adds perspective to the projected images and the resulting effect of envelopment by the play, and its setting gives the spectator an increased feeling of participation.

The backstage area is occupied largely by dressing rooms, shops and technicians' offices. It is connected with the outer stage by corridors skirting the inner stage.

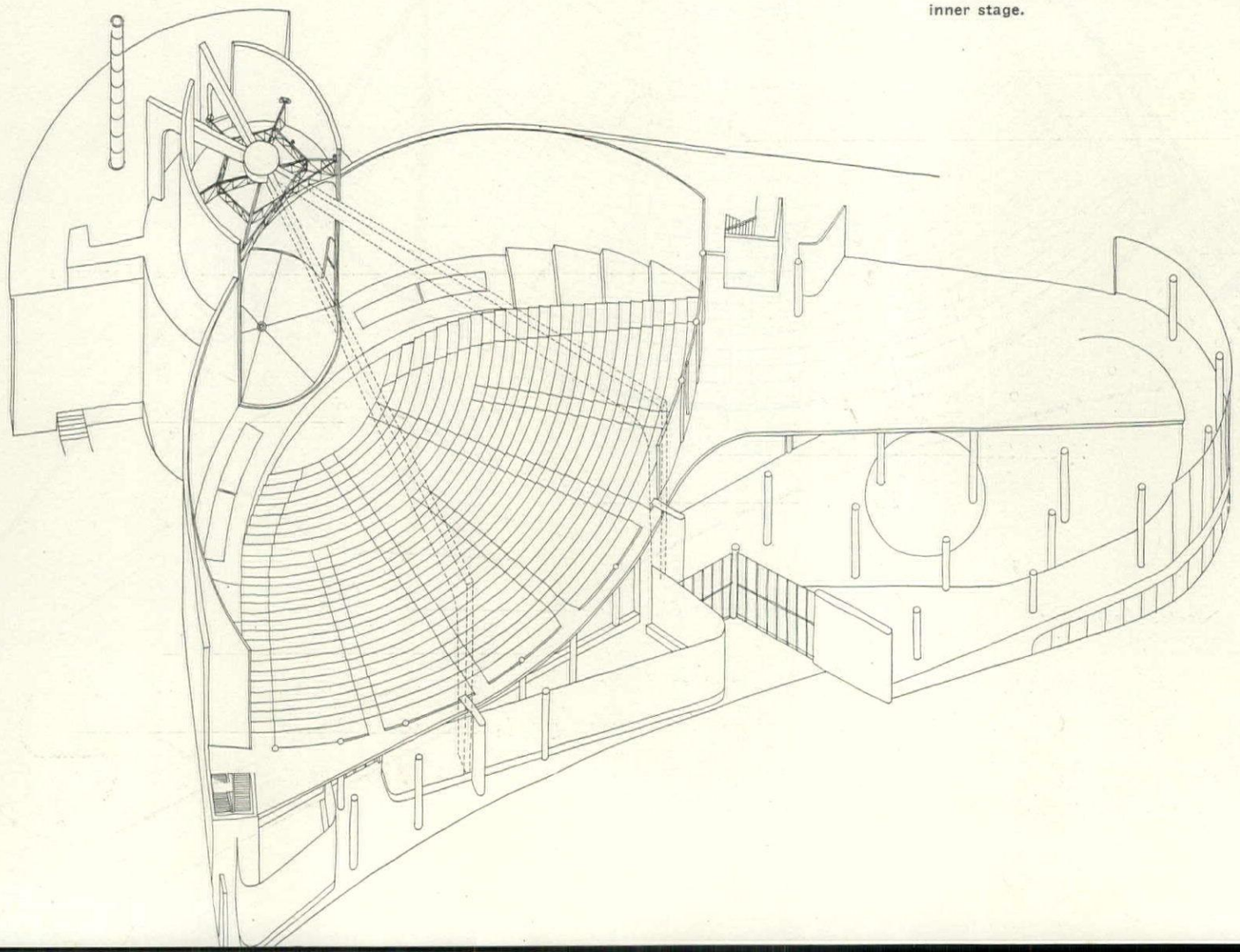
HERMANN HERREY, Architect



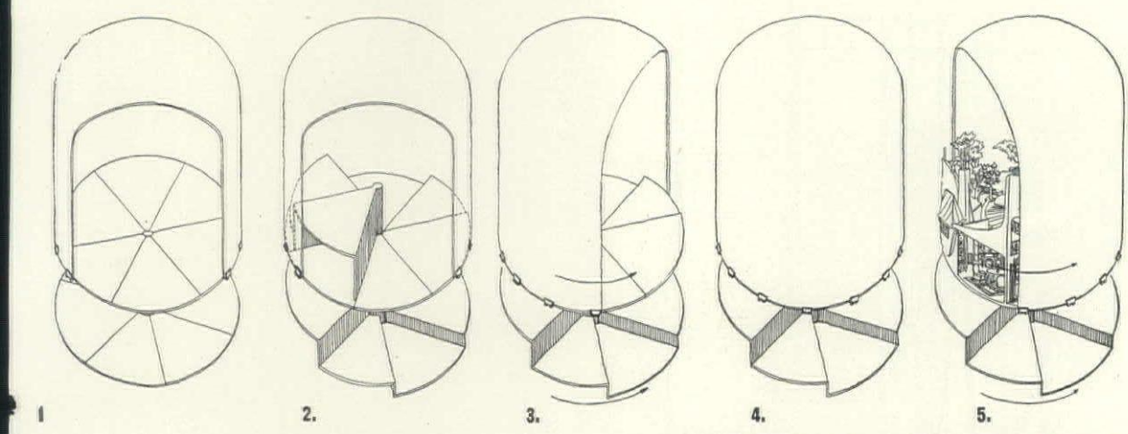


Two crossed reinforced concrete frames support roof. Fly gallery is suspended from it rather than cantilevered. Camera projection room is conventionally concealed in wall behind seating area.

Main load of cyclorama cupola and its mechanism is carried by roof construction. Ramp leading to second floor constitutes main approach to club rooms and auditorium. Chimney for heating system is shown behind inner stage.

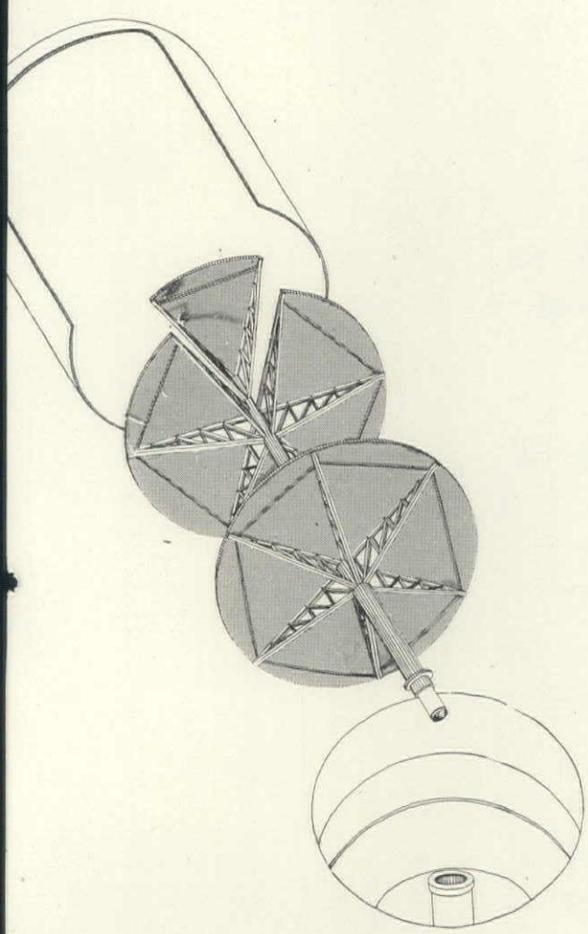


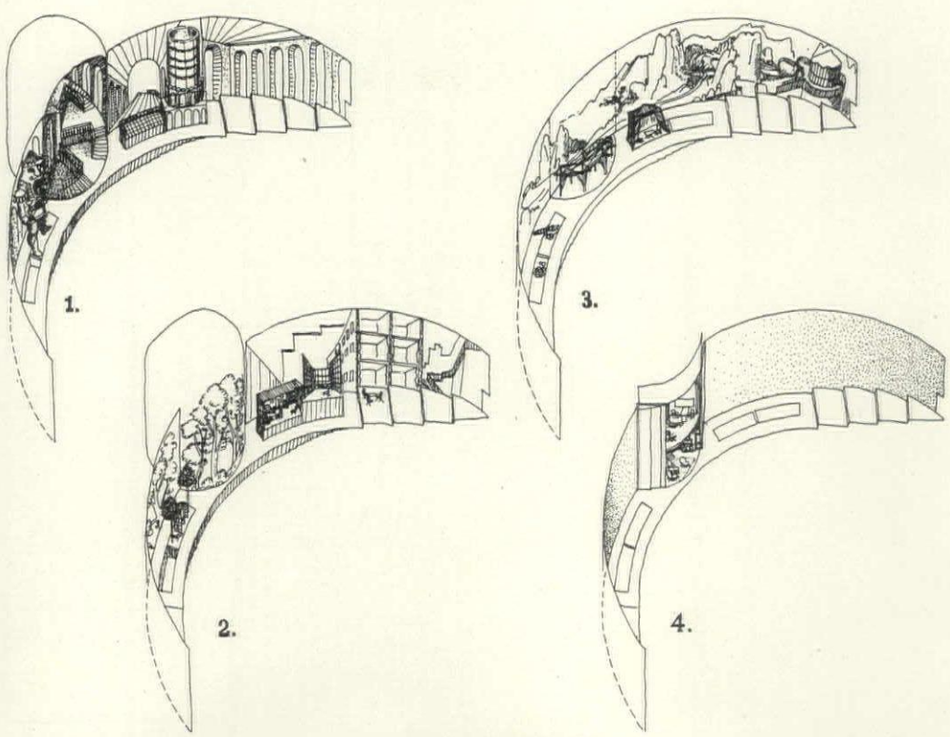
The artistic and mechanical ingenuity of the auditorium design stems from the owners' and architect's desire to produce a theater adaptable to the rapidly expanding vocabulary of modern staging and production—one that would also satisfy a public becoming more and more accustomed to the elaborate psychological and scenic effects of the film world. The fact that Q plays are often sold to bigger houses means matching the West End's most elaborate facilities, makes economy and efficiency of operation essentials of the building to minimize investment in the initial production. Obviously, this premise played an important part in the evolution of the design. But Q productions are by no means picayune. As important as its economy is the scope which it offers actors and directors. The semi-circular outer stage and the small inner stage provide production flexibility practically unknown in smaller theaters, can be used independently or in conjunction. The outer stage contains four elevator platforms on which sets can be raised, wholly or partially assembled, from the storage space below. The revolving inner stage has two floors each containing six pie-shaped sections which can be raised independently or as a unit. Since each section is adequate for the setting of a small scene, it is possible to have as many as twelve prepared before the performance. Scene shifting is accomplished by revolving the stage until the desired portion faces the spectators. It can also be used with one or two floors visible. A cyclorama cupola, open on one side, covers the inner stage. Suspended on rails, it revolves independently of the stage, serves as a conventional theater curtain during complicated scenery shifts. When open to the audience the interior of the cupola can be used as a neutral background for conventional sets or as a screen for projected scenery.



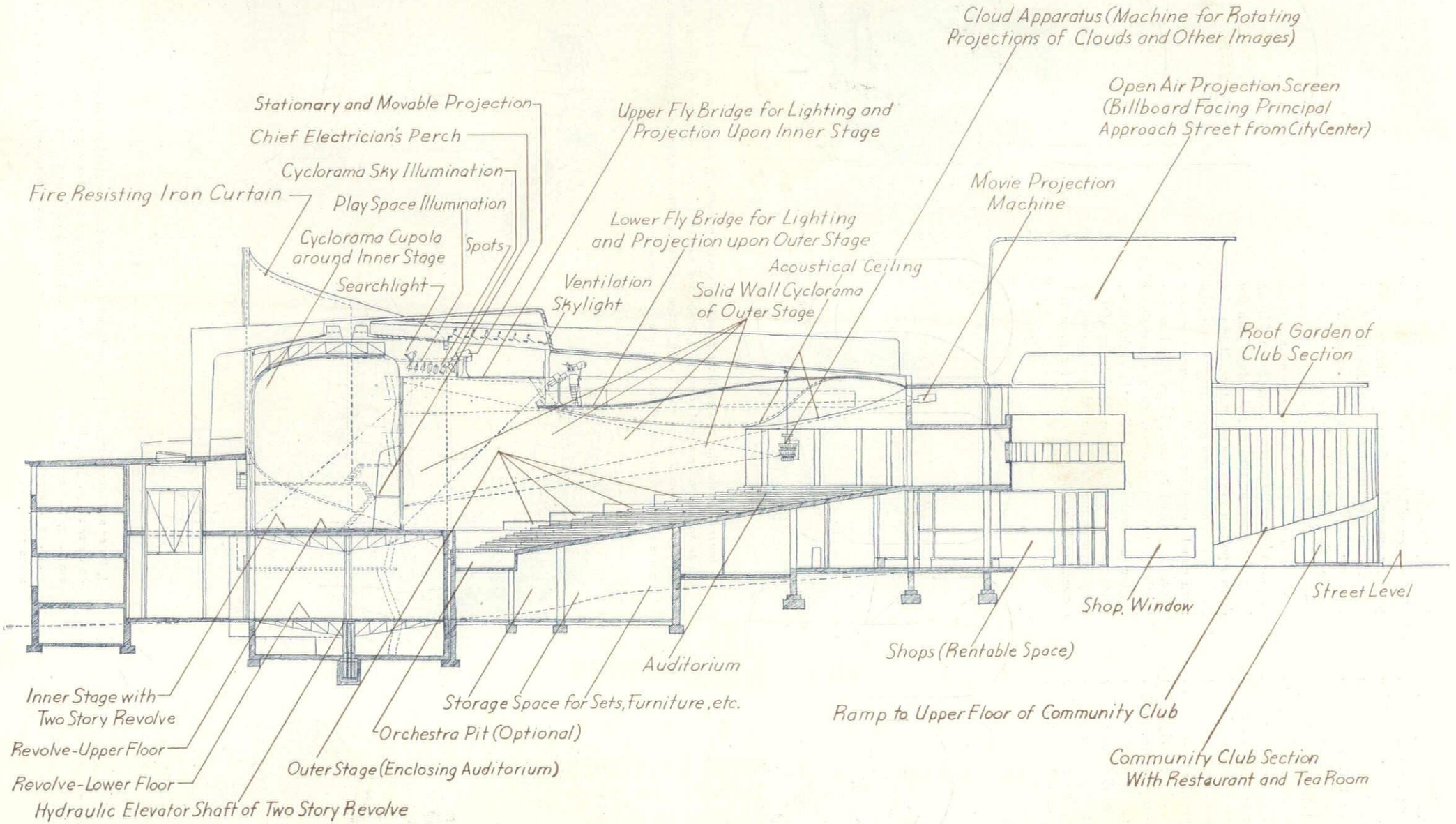


1. Inner stage showing two levels comprised of six sections each. 2. Sections raised and lowered prior to arranging conventional scenery. 3. Stage and cupola revolving away from audience. 4. Cupola turned to conceal scene shifting. 5. Stage reappears with complete set. 6. Exploded view of stage dressed with five different but interrelated scenes.

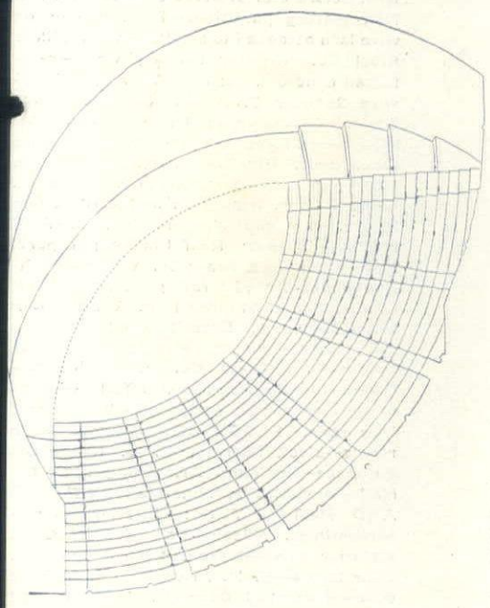




1. Outer and inner stages set for combined use. Note elevator platforms in use for scene shifting on outer stage. 2. Cyclorama cupola turned away from audience used as part of scene on outer stage. 3. Outer stage prepared for individual use. Sliding partitions conceal opening of inner stage. 4. Presentation of inner stage only using its two levels. Left, exploded view of inner stage structure.


Cloud Apparatus (Machine for Rotating Projections of Clouds and Other Images)
Open Air Projection Screen (Billboard Facing Principal Approach Street from City Center)
Stationary and Movable Projection
Chief Electrician's Perch
Cyclorama Sky Illumination
Play Space Illumination
Spots
Fire Resisting Iron Curtain
Cyclorama Cupola around Inner Stage
Searchlight
Upper Fly Bridge for Lighting and Projection Upon Inner Stage
Movie Projection Machine
Lower Fly Bridge for Lighting and Projection upon Outer Stage
Acoustical Ceiling
Ventilation Skylight
Solid Wall Cyclorama of Outer Stage
Roof Garden of Club Section
Shop Window
Street Level
Auditorium
Shops (Rentable Space)
Inner Stage with Two Story Revolve
Revolve-Upper Floor
Revolve-Lower Floor
Hydraulic Elevator Shaft of Two Story Revolve
Outer Stage (Enclosing Auditorium)
Orchestra Pit (Optional)
Storage Space for Sets, Furniture, etc.
Ramp to Upper Floor of Community Club
Community Club Section With Restaurant and Tea Room

In an amphitheater patterned on the classic type, individual seats at the Q have swivel bases. Regardless of the price he pays for his ticket, every member of the audience can see the entire stage. Heads of fellow spectators are always below the line of vision since the floor of the auditorium is slightly convex and ends of outer stage are built up in steps. The proximity of the actor to his audience, his ability to walk around the spectators while addressing them rather than having to project his role from behind footlights and orchestra pits were calculated by the architect to increase the directness and impact of the performance. Seating capacity is 1,000 to 1,200. The design provides for replacement of the first ten rows in the orchestra by a movable extension of the outer stage when the hall is being used for banquets, balls and other community functions.

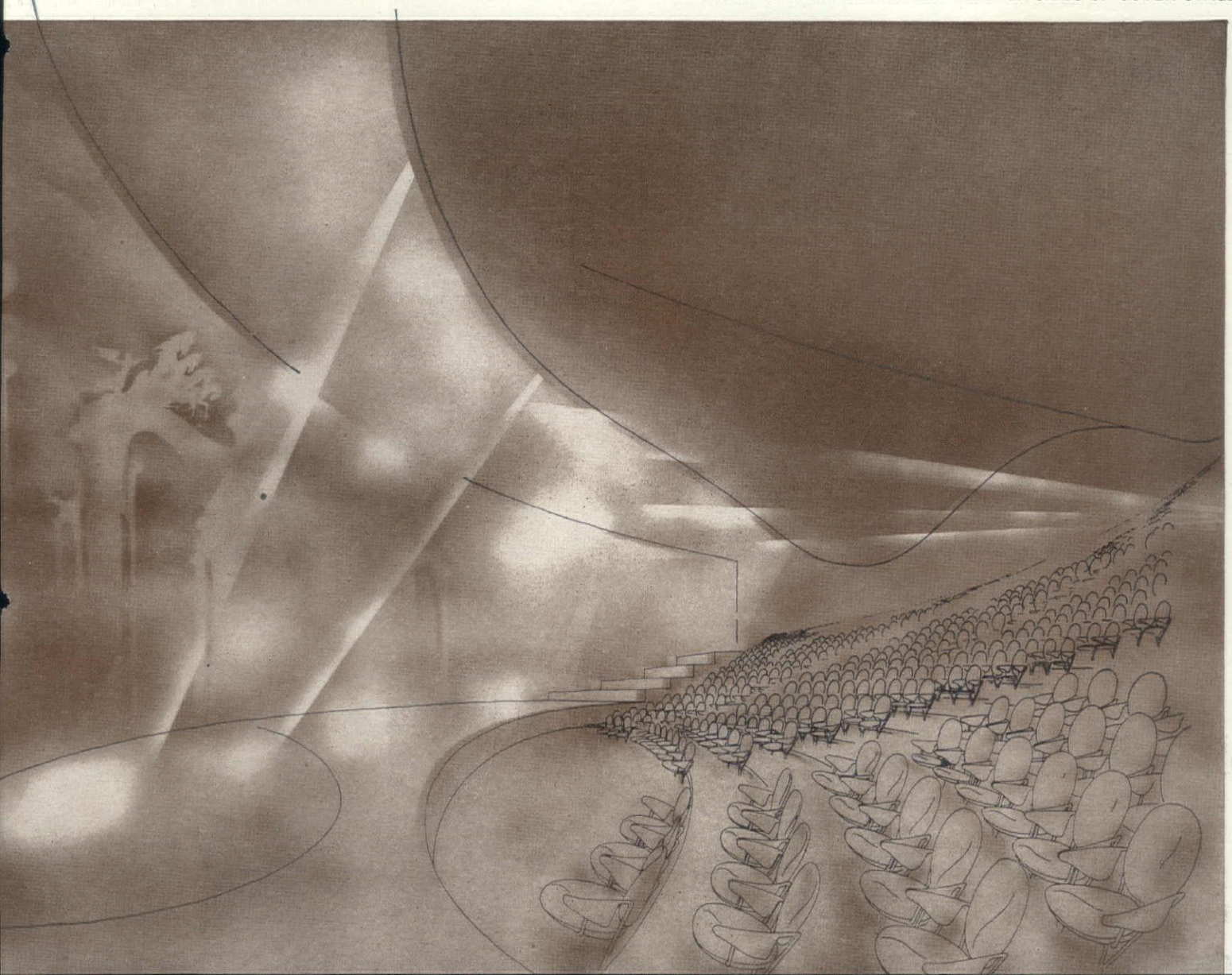


An outstanding feature of the design is the elimination of the familiar grid, usually the most expensive part of a theater (ornamentation a la "movie palace" excluded). Its absence is compensated by a unique handling of staging facilities. Instead of the usual heavy backdrops cumbersomely suspended in a private heaven of steel girders over the stage, non-projected scenery at the Q is assembled, demounted and stored either in the basement or backstage. Aside from operating flexibility the elimination of the complicated grid simplifies construction and reduces cost, reduces the need for fire protection. A circular fire-resistant curtain separates the the inner stage from the outer stage and auditorium. Since the law reads that such a curtain must descend of its own weight, Herrey devised a rigid cylindrical screen whose two halves move on slanted tracks. When open, the curtain projects above the roof of the theater section, appears as a structural element of the design.

Two crossed arches of reinforced concrete are the structure's principal supports. And because of the shape and spaciousness of the public rooms, exposed structural columns are effectively incorporated in the design.

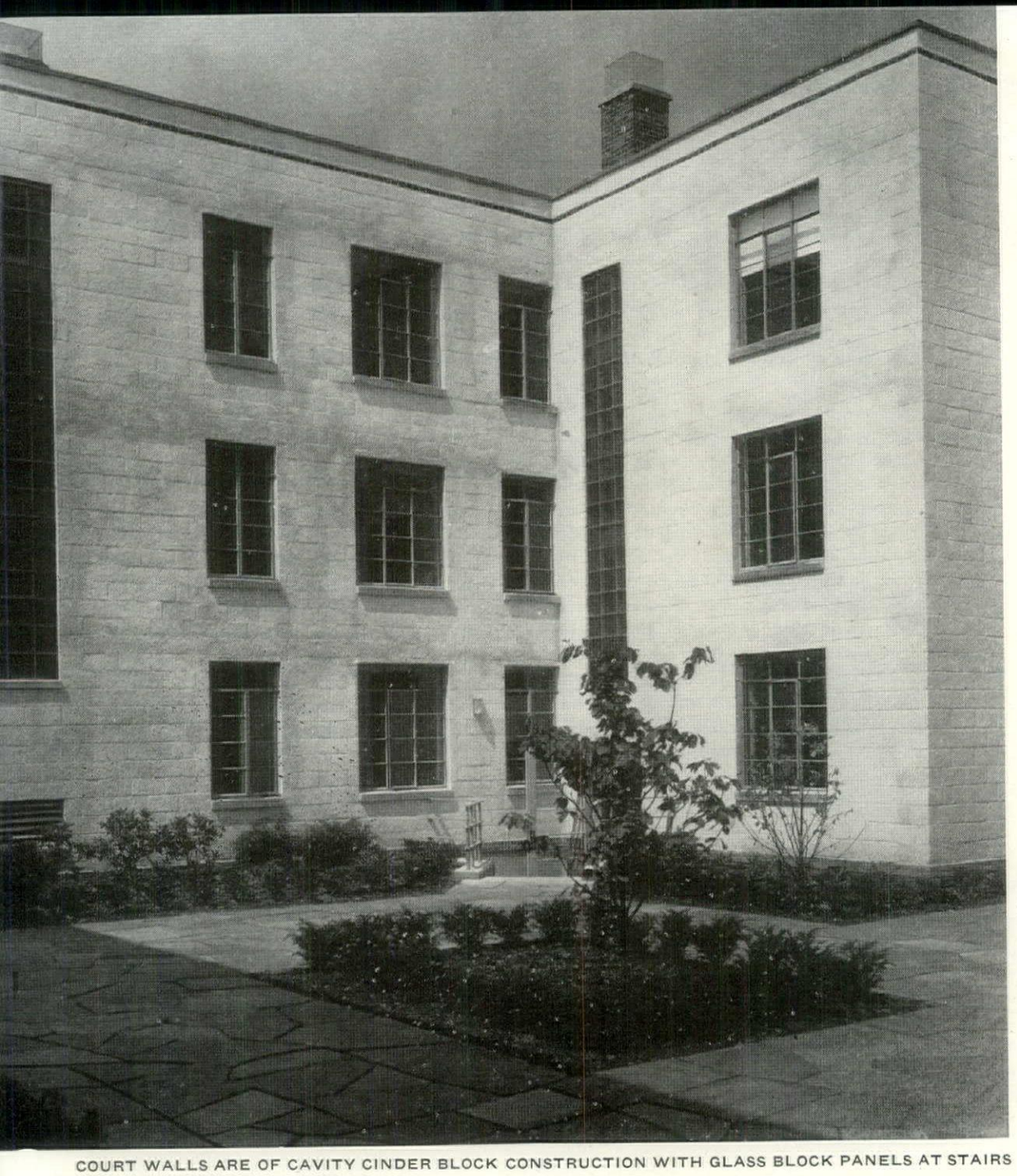
The art of projecting scenery, little known or practiced in this country, is capable of producing much more delicate sensory effects than the familiar atmosphere of light and painted canvass. But to take full advantage of its many gradations and psychological subtleties, relatively elaborate projecting and illuminating equipment is necessary. There is a good deal more to projecting scenery than slipping a colored slide into a lantern. For example, one special bit of mechanism suspended in the middle of the auditorium like a concert mike is used exclusively to simulate cloud movement with its variegated lights, and other mobile effects. This, however, is the only bit of equipment visible to the audience. Located on fly galleries concealed above the acoustical ceiling are two machines for the projection of scenery on the inner stage and seven for the outer stage. Most lighting, including spots, is handled from locations along the same gallery. In the usual location, above and behind the audience, is a movie projector and additional lighting equipment. While lantern slide scenery can be highly effective in its own right, with skillful handling it blends with and adds to conventional props, appearing indistinguishable from them.

NDIVIDUAL SWIVEL CHAIRS AND SHARPLY CURVED SEAT ROWS GIVE ALL SPECTATORS AN UNINTERRUPTED VIEW OF SIDES OF OUTER STAGE



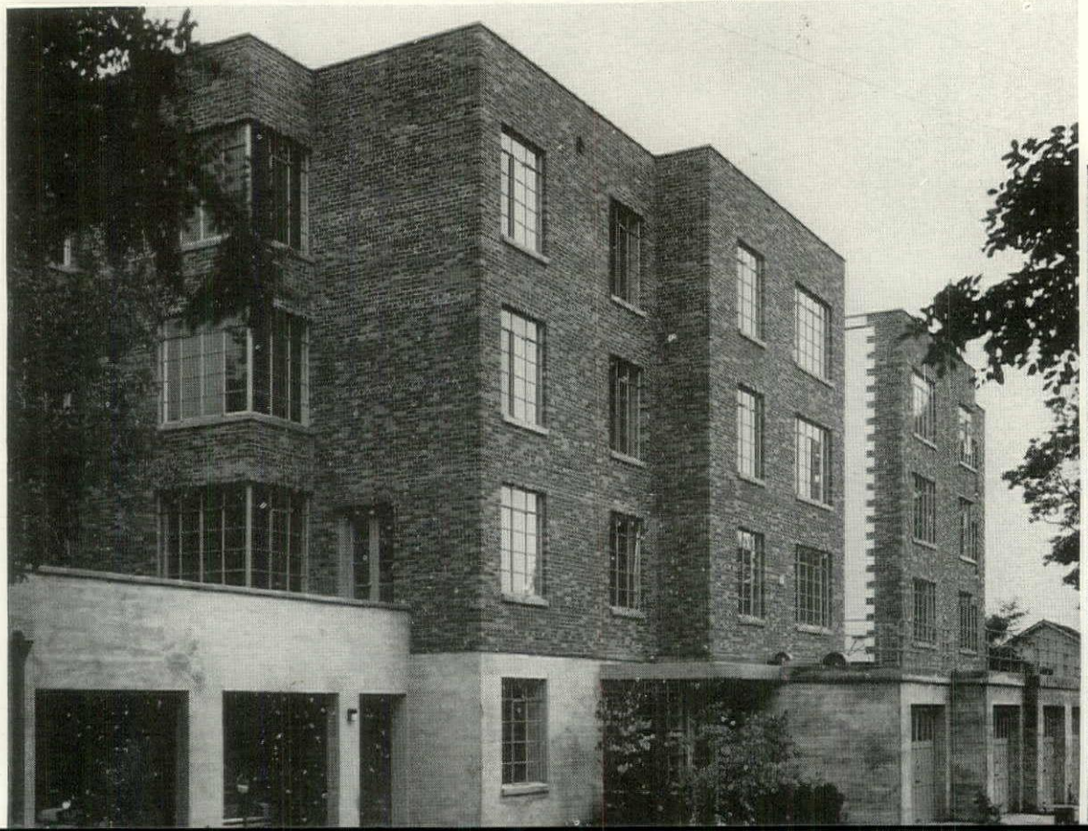
RENTAL PROJEC

FOUNDATIONS—reinforced concrete. Waterproofing—asphalt coating. STRUCTURE: Exterior walls—4 in. brick, 2 in. air space and 6 to 8 in. cinder block coated with Elaterite, Elaterite Paint & Mfg. Co., and plastered. Court walls—same, with 4 in. cinder block instead of brick, sprayed with Colorcrete, Colorcrete Industries, Inc. Non-bearing partitions—2 in. plaster on wire lath attached to steel channels, Milcor Steel Co. Interior bearing walls—reinforced concrete. Reinforcing steel—Wickwire Spencer Steel Co. Cement—Penn Dixie, Pennsylvania Dixie Cement Co. Floors—reinforced concrete flat slab; forms faced with Presdwood, Masonite Corp. ROOF—reinforced concrete slab, 2 in. Celotex Corp. insulation and Bird & Son 20 yr. tar and slag roofing. SHEET METAL WORK: Roof Flashing—copper, Revere Copper & Brass Co. Window flashing copper-coated Kraft paper, Sisalkraft Co. Ducts—galvanized iron. WINDOWS: Sash—Fenestra, Detroit Steel Products Co. Glass—double strength, Libbey-Owens-Ford Glass Co. Glass blocks—Owens-Illinois Glass Co. STAIRS—reinforced concrete, carborundum surface; iron rails. FLOOR COVERINGS: Main rooms—block flooring, E. L. Bruce Co. Kitchens—linoleum, Armstrong Cork Co. Halls—asphalt tile, Johns-Manville. WOOD AND METAL TRIM: Interior doors—Streamliner, Wheeler-Osgood Sales Corp. Exterior doors—Morgan Sash & Door Co. Door bucks—E. H. Friedrick Co. Garage doors—Overhead Door Co. HARDWARE—Lockwood Hardware Mfg. Co. and McKinney Mfg. Co. PAINTS—Pratt & Lambert, Inc. ELECTRICAL INSTALLATION—Enameled Metals Co., Austin Co., Habirshaw Wire Co., Bulldog Mfg. Co., Murray Switch Co., Columbia Cable Co., Harvey Hubbell Co., Pass & Seymour, Inc., Auth Electric Specialty Co. PLUMBING—Eljer Mfg. Co., W. A. Case & Son Mfg. Co., F. H. Lawson Co. Water supply pipes—Anaconda copper, American Brass Co. Kitchen equipment: Range—Sunray Stove Co. Refrigerator—Westinghouse Electric & Mfg. Co. Sinks and cabinets—Youngstown Pressed Steel Co. HEATING—pumped hot water system. Boilers—U. S. Radiator Co. Stokers—Iron Fireman Mfg. Co. Radiators and grilles—The Trane Co. Regulators—Hoffman Specialty Co. Valves—Scott Pump Co. Water heaters—Taco Heaters, Inc. Pumps—H. A. Thrush & Co. SPECIAL EQUIPMENT: Ventilating fans—Emerson Electric Mfg. Co. Incinerator—Kerner Incinerator Div., Morse Boulger Destructor Co. Venetian blinds—Columbia Mills, Inc.

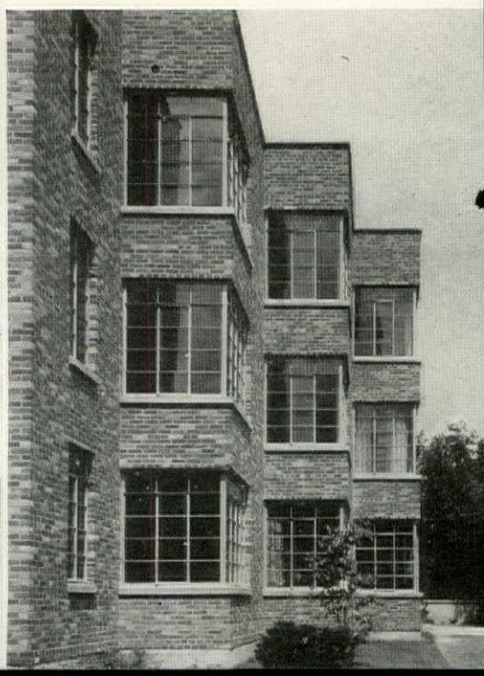


COURT WALLS ARE OF CAVITY CINDER BLOCK CONSTRUCTION WITH GLASS BLOCK PANELS AT STAIRS

NORTH SIDE SHOWS BASEMENT GARAGES WITH TERRACE ABOVE, MAIN ENTRANCE BEHIND PLANTING



CORNER WINDOWS DOMINATE ALL FACA



CONCRETE is designer-owner's bid for permanent investment with minimum maintenance.

A 58-unit apartment building in the college town of Ithaca, N. Y., Fairview Manor is unusual in design, significant in construction. On a high bluff overlooking Cascadilla Gorge and Cornell University beyond, the site commands views in almost all directions, and room layout and fenestration were designed to capitalize on this fact. Set-backs on each side of the building provide corner windows in 36 of the living rooms. Built for members of the university's teaching and research staffs, most apartments are small; only six have more than three rooms.

More interesting than the building's specialized room arrangement and multi-cornered design is its concrete construction—a type made timely by today's lumber shortage and relative abundance of cement. The shell is comprised of reinforced concrete interior walls and floor slabs, surrounded with cinder block and brick curtain walls around the outside and two layers of cinder block around the interior court. The reason for this construction is to be found in the experience of the man who designed and owns it, Norbert H. Schickel. Son of a prolific architect, Designer Schickel has long specialized in mechanical engineering (automobiles, motorcycles, airplane motors and tanks), but has also pondered the problem of building with modern production methods. Starting with the premise that housing must be "solid, substantial, permanent," his thinking has naturally been channeled toward monolithic concrete.

Ithaca's need for apartments (only one other small rental project has been built there in the past ten years) prompted Schickel to undertake first a large multi-family project rather than the detached housing which he still plans to build in concrete. In this experiment he hoped to prove that with concrete a better building could be built without an increase in cost. To minimize costs he poured his concrete into forms lined with composition board which gave the walls and ceilings a smooth finish and eliminated the necessity for plastering. Only a half-story in height, forms were economically used six times before being discarded. Other economies: a hilltop site lessened drainage problems and required a minimum of waterproofing; only about one quarter of the basement was finished to provide storage and furnace rooms.

Since he was client as well as designer, Engineer Schickel was interested in economies in maintenance, operation and depreciation as well as in construction. He points to the relative absence of plaster cracks, and notes that his building is cooler in summer, warmer in winter than less substantial construction. Although some tenants argue to the contrary, it is claimed that it is nearly soundproof. There is no argument, however, about the building's fire-proofness: fire insurance costs only 75 cents a thousand per year—about one-fifth of the rate charged owners of local frame apartment buildings.

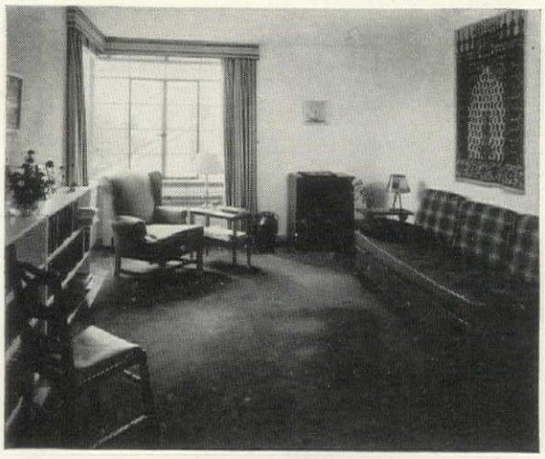
Not having broken any construction cost records, Fairview Manor breaks no rental records. Rent per room averages about $20, falls in the upper stratum when compared with that charged in other FHA-insured projects. The rental scale and a breakdown of apartments by size:

10 one-room units at $35-40
24 two-room units at $47-51
18 three-room units at $58-63
6 four-room units at $78-80

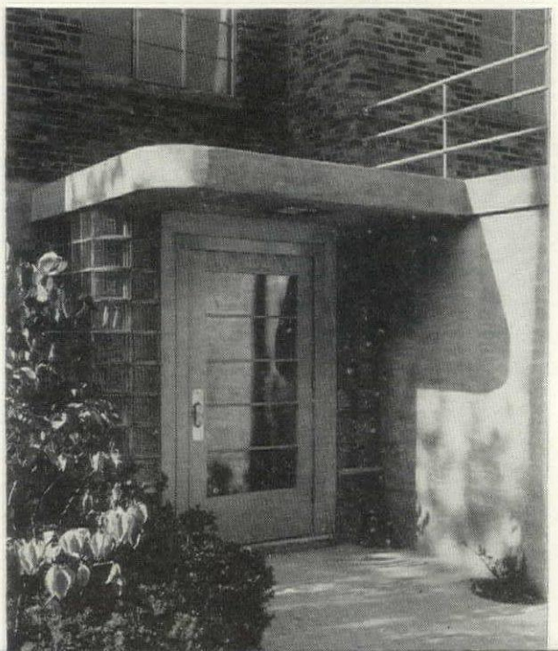
Rents include heat, water and cooking gas. Tenants are metered electricity for lighting and refrigeration and pay accordingly. Twelve garages are available at an extra $6 per month.

Completed prior to the war, Fairview Manor has proved a successful investment for Designer-owner Schickel and for the mortgagees. New York City's Marine Midland Trust Co. wrote the mortgage, carried it through the construction period, then sold it to the Trustees of the State Employees' Retirement System. Insured by FHA, the loan originally totaled $170,000, covered 74 per cent of Fairview Manor's total valuation.

LIVING ROOM WALL, RIGHT, IS PAINTED CONCRETE

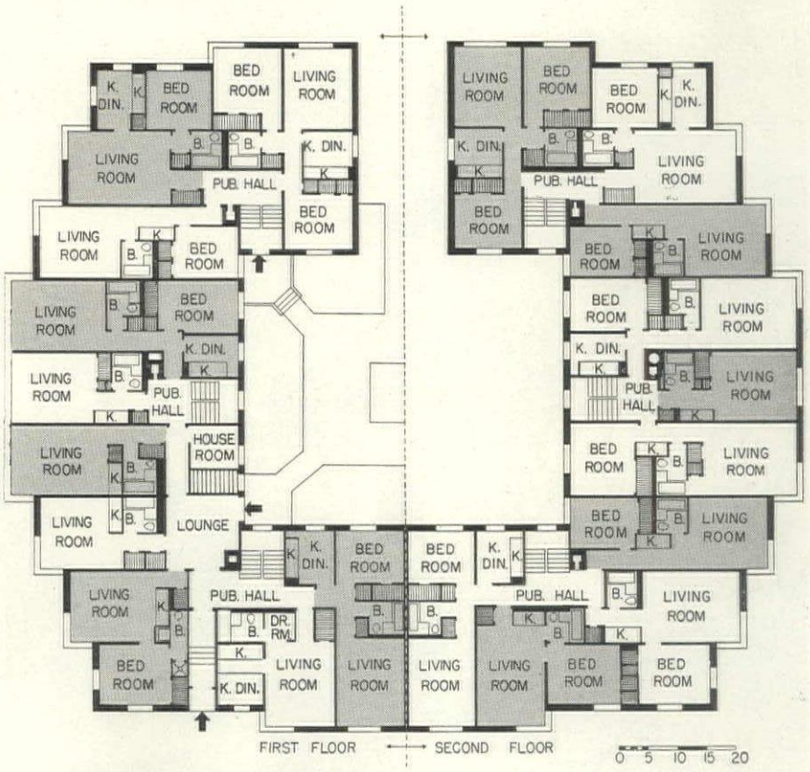


MAIN BASEMENT ENTRANCE LEADS TO COURTYARD



NORBERT H. SCHICKEL, Designer-Engineer

A. H. McPHERSON & SON, General Contractor



COMPOSITE PLAN shows first floor to left, typical upper floor to right. Making the most of a small, square site, the designer shaped his building like a doughnut, located all living rooms around the outer circumference, placed most of the bedrooms and kitchens around the court, used vented interior bathrooms throughout. Access is provided by two entrances on the street to the south (bottom), by a basement entry on the street to the north. Major element in the project's circulatory system is the interior court.

WARSAW'S LONG, HEROIC HISTORY closes another of its bitter chapt



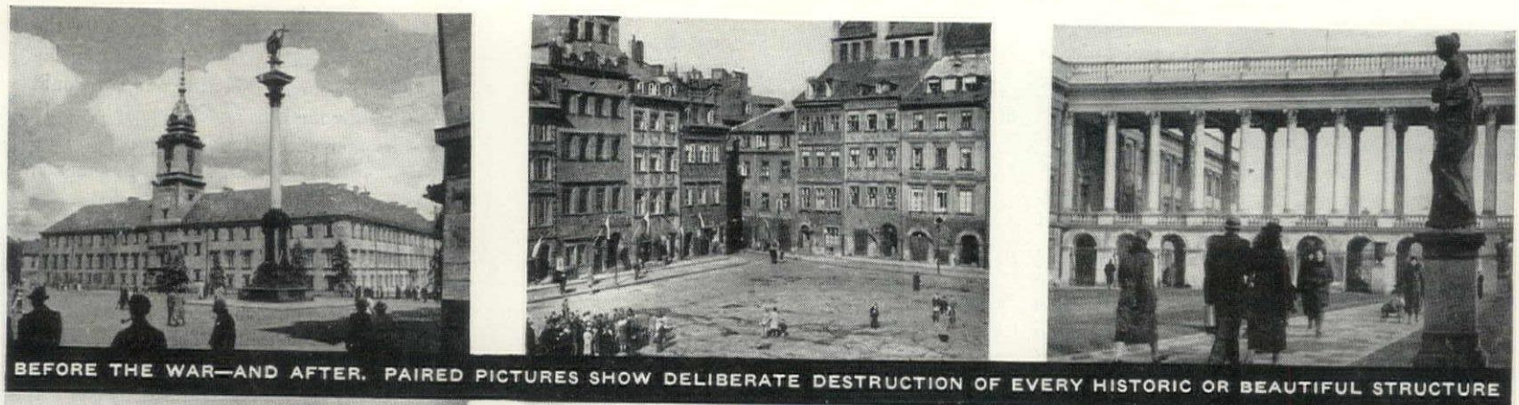
At the end of the 16th Century King Sigismund III made Warsaw the capital of Poland. Long before that, Warsaw had been an important city—located astride the main trade routes between Western Europe and Russia: but it was Sigismund who gave her greatness.



The baroque gables of St. Anne's and the onion-shaped spire of Sigismund's palace dominated the older portions of the pre-war city, whose narrow streets and narrow medieval buildings had been the scenes of many struggles for Polish independence. It was in this area that the 1944 Insurrection was finally crushed by the Nazis.

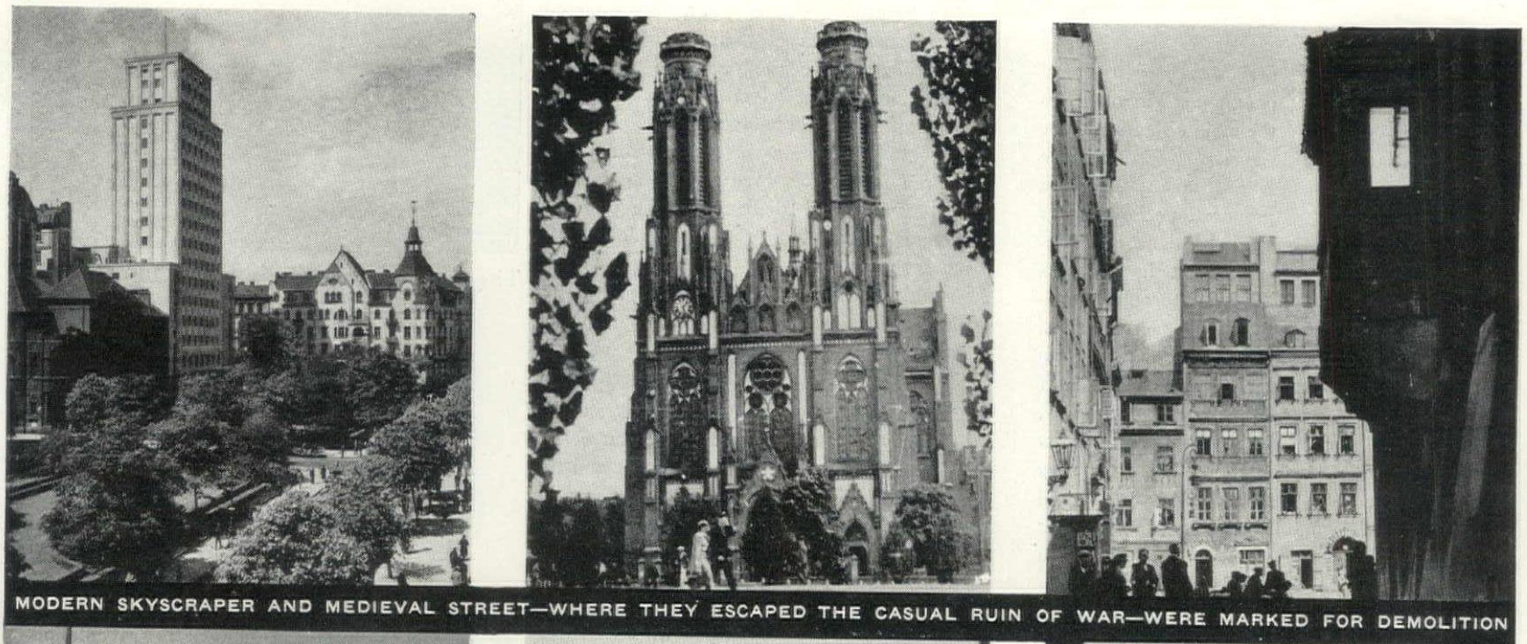


ur ferocious waves of Nazi destruction make way for planned, wholesale reconstruction.



BEFORE THE WAR—AND AFTER. PAIRED PICTURES SHOW DELIBERATE DESTRUCTION OF EVERY HISTORIC OR BEAUTIFUL STRUCTURE





MODERN SKYSCRAPER AND MEDIEVAL STREET—WHERE THEY ESCAPED THE CASUAL RUIN OF WAR—WERE MARKED FOR DEMOLITION

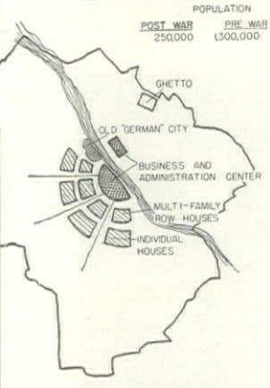


Life photo: John Phillips

"Warsaw Accuses!" Architect Stanislaw Albrecht describes life under the Nazi heel.

"Warsaw was the first city in Europe to learn all the cruelty of German warfare, and the first to resist . . . With Warsaw in flames and crumbling, the entire population became soldiers. They fought valiantly, despite drastic shortages of munitions, water, light and food. Warsaw's population was last to surrender of all Poland, and its surrender was only a pretended one. Only a person who lived in this peculiar city during the six years of German occupation could understand the struggle which Warsaw waged against the tribe of *übermenschen*. The source of power of the city's inhabitants was their solidarity and mutual devotion to the ideal of a free Warsaw. In vain, the German invaders endeavored to break this spirit.

"Although much has already been said about the cruel methods applied by the Germans in this war, Warsaw had a tragic priority in enduring these sufferings. In Poland, Hitler's intent was not merely to destroy the government organization, as planned for other countries, but the whole nation as well—a nation which for centuries had resisted German eastern expansion. The methods of destruction applied here exceeded everything that Europe ever witnessed or could imagine. Warsaw was the main objective of the German *fuehrer*. The Nazis made scientific preparations for the war against Poland, and Warsaw's part in Poland's life was thoroughly analyzed. The German High Command planned to destroy Poland's capital city both as a locality and as a center of national life. (Had the Nazis won the war, they would have rebuilt it into a small, cross-roads garrison town as indicated in the map above, based on documents captured from the German High Command.—Ed.) Methods of implacable terror were applied to achieve these ends. All were persecuted—both citizens who worked in the underground resistance movement and accidental passersby on the streets. There were numerous manhunts, and searches in houses where people were seized to fill up the number scheduled for slaughter on a particular day. Often, the massacres took place in broad daylight, without trial, and with the victims blindfolded.



Rubber tired gallows for Polish patriots



Polish Press Agency

"All these arrests, searches, cruel interrogations in the Gestapo prison and executions in the streets, were meant to break the spirit of Warsaw. But the city had a long tradition of resistance and struggle. Numerous secret organizations, military, political and social sprang up. Underground high schools and universities were started, and classes held in private apartments. Professional organizations of newspapermen, doctors, engineers, etc. continued their work. The underground press was printed and distributed by methods of which the most inventive mystery writer would hardly dream. Military organizations trained the youth in secret military schools and colleges, and small factories and workshops worked for military purposes. The solidarity of the citizens was so strong that it was much work for the Nazis to discover even the smallest links of the underground organizations.

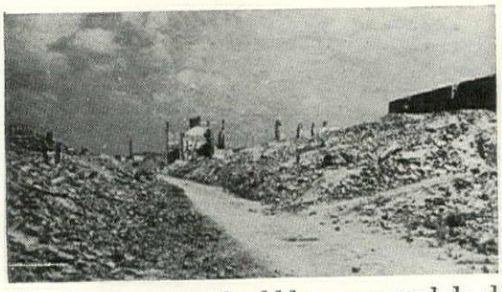
"In February 1943 all Warsaw shuddered. The Germans started their systematic work of wiping out the ghetto, where the Jewish population, confined for many months, was waiting for inevitable death. The people of the ghetto died like heroes. Men, women and children fought for three months against the guns, cannon and airplanes of the powerful German army. During these three months Warsaw kept supplying them with food and ammunition through sewers. But they succumbed inevitably to the Nazis' superior might. After the ghetto was wiped out this section of Warsaw resembled a desert.

"Then came the last and most tragic act in the martyrdom of Warsaw—the insurrection of 1944. Every person, save the sick and the children, participated. Streets were closed by means of barricades, built of stones and blocks of pavement torn up for the purpose. These barricades were desperately defended against the attacks of the German tanks and infantry. What weapons the people had were very few, and came from stocks stored during the occupation or captured from a few Germans. Food supplies were delivered to defenders of the barricades by inhabitants of neighboring houses and by all who, for lack of weapons, could not fight.

"The engineers, professors and craftsmen of Warsaw collaborated and performed miracles of inventiveness. Electricity plants supplied the city with current for one month, despite heavy shelling, airplane bombs, flamethrowers and tanks. Desperate efforts were made to continue the supply of water to the people, and when the regular water supply was halted by the enemy, the insurrectionists dug wells. For many days and nights the people fought and organized life in the besieged city. As one section after another would be captured by the Germans, the people would escape to other still defending sections. People were so crowded that, even in basements, there was no place for the wounded . . .

"After two months of resistance, the burned and starving city was completely exhausted. The resisting population of Warsaw, agonized, was crowded into one small section. Capitulation was then inevitable. The Germans ordered that all living people leave the city at once. There remained only ruins of houses and graves, unburied corpses of defenders, and smoldering embers . . .

"The captured city was the prey of its enemy's hatred. The systematic destruction had been thorough and merciless, and more was yet to come. The total list of places and things burned, devastated or pillaged is far too long to cite here. To merely hint at the scope of destruction: the preserved interiors of the royal castle were sacked, as were the city's archives, museums and libraries. The Germans took to Germany or destroyed: paintings in collections of the Society for Encouraging Fine Art; collections of the Goluchow Museum deposited in Warsaw during the war; many beautiful churches, the Great Theatre, the Ministry of Treasury and numerous other architecturally beautiful buildings; 17th and 18th century mansions; monuments to Poland's heroes. The German dignitaries presented each other with gifts of stolen booty—one of them Rembrandt's "Portrait of a Young Man." . . .



The ghetto: acres of rubble, uncounted dead

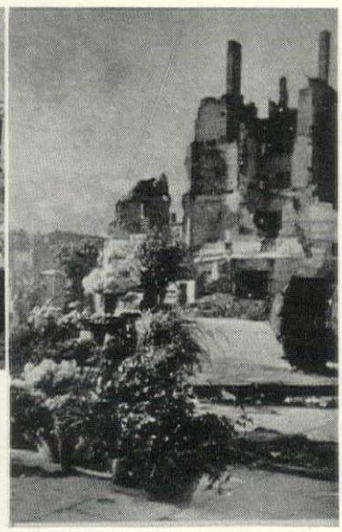
"The premeditation of the crimes may be seen in the following incidents: Two columns remained standing after the blowing up of the colonnade over the Tomb of the Unknown Soldier. These were blown up the next day. The walls of Lazenki Palace were bored for the insertion of dynamite. The last day before they fled, the Nazis set afire the library . . .

"For these reasons and many more here unspoken, mutilated Warsaw neither grieves nor complains, but accuses . . . Every visitor will experience the shock and sorrow felt by General Eisenhower during his visit to Warsaw in 1945, when he said: "Warsaw is far more tragic than anything I have seen . . . This represents the deliberate destruction and burning out of an entire city by the Germans."

Life returns. Only the people remain--but they are planning a new, greater Warsaw.

Polish Press Agency





First came the food shops . . .

. . . but flowers were not far behind

Polish Press Agency





Before the mains were repaired, water was scarce . . .

. . . but nurseries were set up in the ruins

The flocks returned to their ravaged churches





To clear the debris,

men and women work



Life photo: John Phillips

THE destruction of Warsaw was unique in savagery and completeness, for it suffered not one, but four distinct periods of devastation: in September 1939, when the Germans first captured it; in February 1943 when the Nazis obliterated the Jewish quarter and all the people in it; in September 1944 when the people of Warsaw rebelled and the Nazi army methodically destroyed it block by block; and finally in January 1945 when, withdrawing before the Soviet armies, the Germans by demolition and fire completed their program for the utter destruction of the city. The results were appalling. A city of over a million people had been reduced to the status of a graveyard. Uncounted thousands had died in the city (250,000 in the September insurrection alone) and the Germans had forcibly evicted the rest in the fall of 1944. Over half of the entire area was totally destroyed, reduced literally to rubble as far as the eye could reach. Some 18 per cent of the total was heavily damaged but repairable: only 27 per cent of the city escaped with light damage*

But if Warsaw was the first to fall, it will also be one of the first to rise again—and in a far finer form. A complete reconstruction plan—much of it done underground by Polish architects, engineers and city planners during the Nazi occupation—has already been formulated and formally adopted by the Government. Both technically and socially, this plan is a remarkable project.

Seeing the acres of rubble and gutted walls, many an American architect might be inclined to wonder why the Polish people did not start afresh in another spot. The reasons for not doing so are complex but compelling. Much more than our own capital at Washington, Warsaw was the cultural, political and economic heart of Poland. The principal university, the seat of government and administration, the largest libraries and museums, the biggest research institutions and hospitals were all located here. Warsaw was the heart of Poland's transportation network and housed the largest concentration of her industry. As a natural corollary, Warsaw's population included the largest number of scientists, doctors, lawyers, teachers, architects and engineers as well as skilled industrial workers. Even more important than these physical facts was the fact that Warsaw had for centuries been the center of Polish nationalism. Long before Poland's existence as an independent nation, the city on the Vistula had been the seat of a national culture. Hitler recognized this when he attempted to destroy Warsaw and her citizens answered him when they fought back to the last. Today, most of the buildings are gone, their equipment destroyed or stolen; but the people have returned determined to build a larger and finer Warsaw on the ruins of the old.

Historical continuity is basic

The new city will be based on old cultural traditions, and will have the character of a metropolis. It will be the center of the cultural, political and economic life of Poland. It will be planned as part of a national and regional plan. Designed in a pattern of organic decentralization, a series of residential boroughs will house the population, each connected economically and socially with the city center, and none more than 30 minutes away by high speed transport.

The maximum population of the future city is expected to

* Of the 17,000 buildings on the left bank of the Vistula (where all public, commercial and industrial structures were located) 9,100 buildings were totally destroyed—6,500 by fire—and an additional 3,300 buildings were completely or partially burned. In the Central City, 74 per cent of the built-up area was demolished. The value of the destroyed buildings, exclusive of contents, has been estimated at one billion dollars.

WARSAW'S NEW PLAN—while following the general configuration of the old cit

be 1 million, and the maximum population of the entire metropolitan area 2 million. There is a definite conviction among its planners that the size of the city should be kept in scale with the size of the nation. This, rather than abstract ideas of city size in general, has determined their estimates.

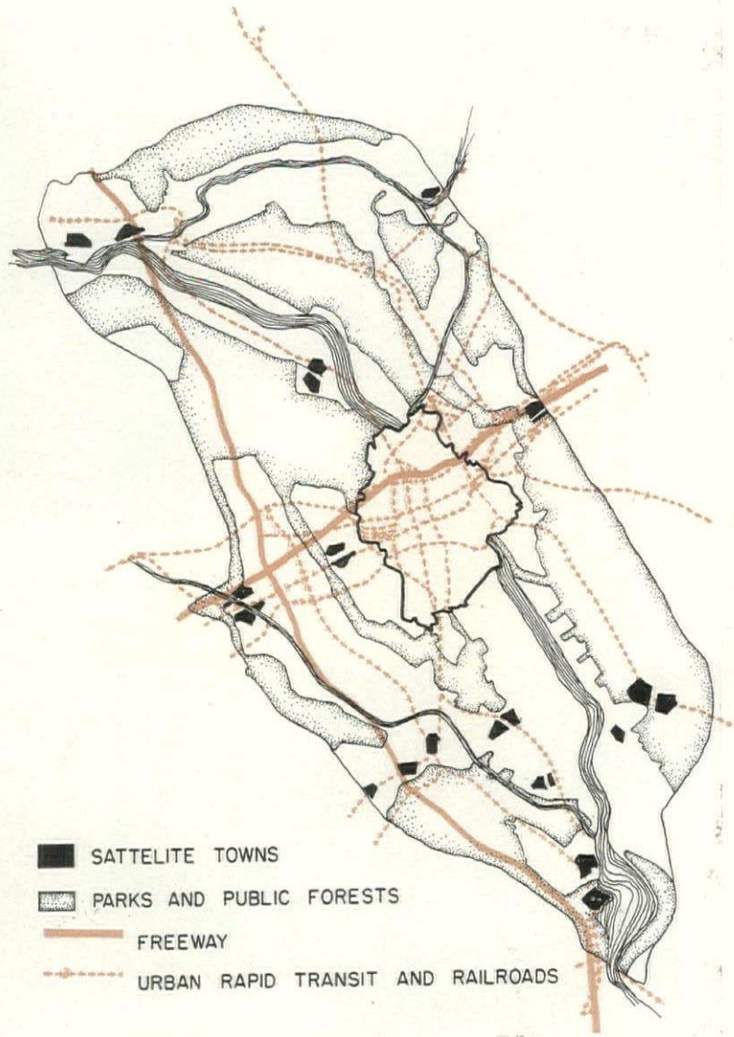
Even a totally destroyed city cannot be dealt with as a vacant site. There remains, as the famous Warsaw planners Helena and Szymon Syrkus have put it, a two-dimensional pattern after the buildings are gone. The continuity between Warsaw's new and old plans is so marked that the efforts of the present planners cannot be understood except in the light of the city's history. During the great period of worldwide city growth, the 19th century, the city of Warsaw was confined by law. At the north end of the city stood the Czarist citadel; but it was a strange fortification whose guns were turned toward the city instead of toward its enemies. Because of the Warsaw insurrections, the Czarist governors of the city were careful to restrict its growth to the range of the artillery of the citadel. This led to an urban congestion unique in Europe. Densities of 550 persons to the acre were not unusual; it was a lucky family which occupied two rooms. And the condition existed for so long that the Polish word for "dwelling" became synonomous for that of "room"—a family with two rooms thus was said to have "two dwellings." Because of it, the citizens of Warsaw became accustomed to communal facilities—public baths, lounges, dining rooms, laundries, playrooms—instead of in their own homes. Even after Polish independence was won in 1919, when the iron ring on Warsaw's expansion was broken and the jerry-built suburbs began to appear, this tradition persisted.

When these artificial barriers were removed in 1919, the city spread out in response to decompression as well as to natural growth. The housing shortage was so great that adequate planning controls were almost impossible. Surplus profits from new industry found investment outlets in tax-exempt apartment buildings. Small speculative builders covered the Warsaw suburbs with a jungle of poorly designed apartments and row houses. Toward the end of the period between the two wars, the situation was brought under partial control. A series of industrial garden suburbs on the model of Radburn, N. J. were constructed and the first serious steps taken in the direction of cooperative housing for workers.

Replanning facilitated by municipal ownership

The pre-war economic base of Warsaw is not expected to change greatly. The city was primarily a capital, where the central administrative offices of the national government were located. It was the center of finance, where most banks and insurance companies were found. It became an important trading and manufacturing center, notably of precision industry, machine tools and luxury goods. Here were located great wholesaling and warehousing facilities, and a considerable development of light and heavy industry. An important communications center, not only for Poland but for Europe as a whole, it has been said that if Warsaw were not rebuilt all Europe would have to be changed. The new plan had, obviously, to take these factors into account.

One of the principal pre-war difficulties was control of land use. This is now greatly simplified in Warsaw because of municipal ownership of all land. The Central Area has already been acquired, and steps have been taken to acquire the adjacent land in the suburbs and beyond for potential expansion. Much land was already owned by the municipality before the war, including utilities and farm lands adjacent to the city. The municipality will now also control lands pre-





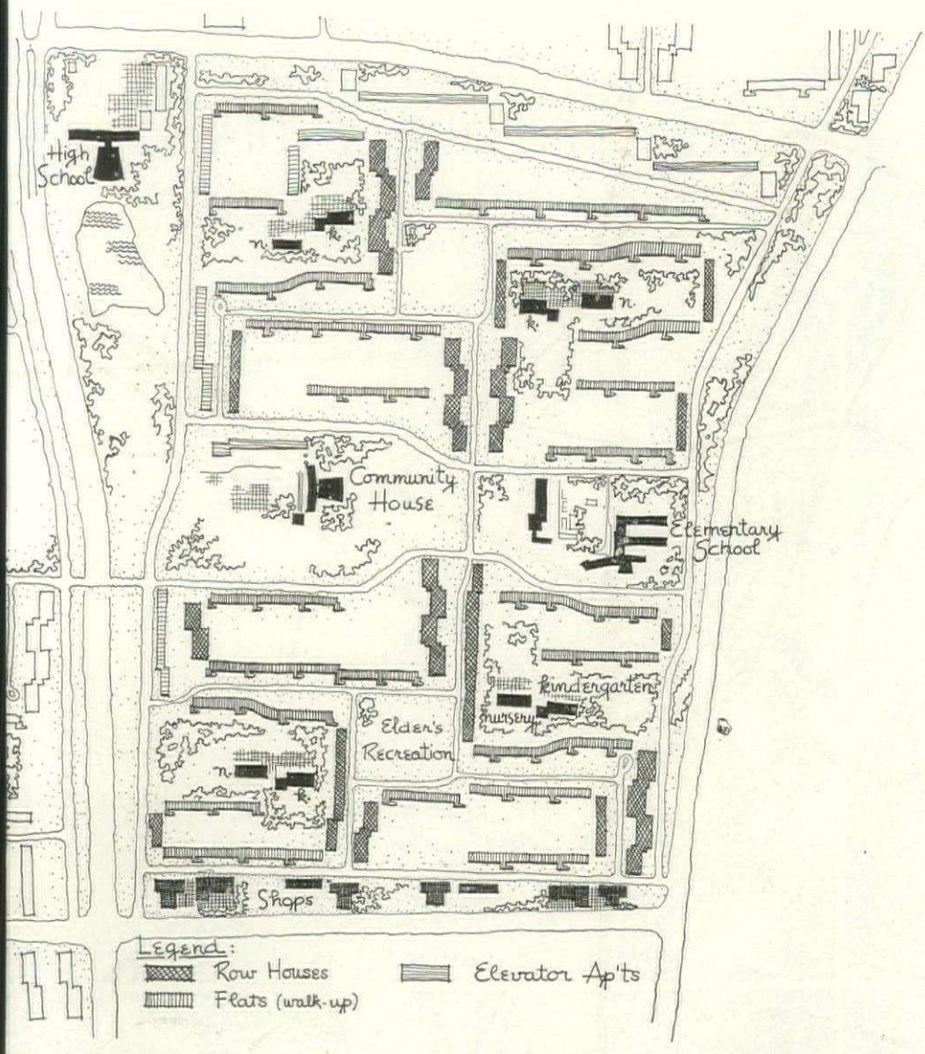
THIS SCHEMATIC STUDY of the central business district indicates the general line of architectural development envisaged. The tall buildings, rectangular street pattern and central square are reminiscent of American cities, but the lavish use of green space is a marked advance. Since the topography of central Warsaw is relatively flat and uninteresting, use of the central skyscrapers for architectural effect is definitely planned. Excavations left from destroyed buildings will also be exploited in the landscaping scheme. All rail and rapid transit lines are underground in this central area.

THE RECTANGULAR SKELETON of both the regional plan (above) and the city plan (right) are determined by the physical characteristics of the area, existing rail lines, highways and canals. The western half of the town sits on a flat-topped line of palisades rather like those at Natchez, Miss. This, even more than the Vistula, serves to divide the city. Highway and transportation networks minimize the division by means of tunnels and bridges but surface planning and landscaping will dramatize this natural feature. National university and government centers in the southeast sector will overlook large parks and recreation areas in the river bend below. The regional plan provides for dairy and truck gardening areas adequate for the city, as well as for greatly increased public forest and parklands.

—envisages a handsome, modern metropolis stretching some 40 miles along the Vistula.



Using a residential "colony" as the basic unit, Warsaw's neighborhoods are self-contained.



A SCHEMATIC SOLUTION for one of Warsaw's residential areas, the plan above shows how the residential colonies are organized into neighborhoods. Three dwelling types are employed—row houses, three-story walk-ups and six-story elevator apartments. Designed for single persons and small childless families, the elevator apartments are placed along the periphery of the block, close to shops and transportation. Row houses and walk-ups form interior colonies, protected from wheeled traffic, small in scale and equipped with playgrounds and nurseries. These elements are interspersed with parks for elderly people and directly connected to sports areas for younger people and adolescents. Community facilities are also centered here. Table below defines various sized planning units and facilities considered necessary to each.

Unit	Population	Max. Size	Community Facilities	Notes
COLONY	1,000 to 2,000	1,500	Child care centers Playgrounds Nursery schools Community club Essential shops Administration	Size depends on whether single or multiple dwellings are used.
NEIGHBORHOOD	5,000 to 10,000	7,500	Elementary schools Adult sports, clubs Library Shops and services Small production Administration	Size depends on social, geographic, structural factors. A balanced occupational make-up is desired with some specialization.
DISTRICT	25,000 to 40,000	32,500	High School Social center Library Theater and cinema Restaurants, cafes Pharmacy Municipal offices Government services Administration	Size depends on topography, economic character, adjacent areas of employment and transportation.
BOROUGH	100,000 to 250,000	varies	Junior College Music halls Branch museums Library Specialty stores Miscellaneous Administration	Based on pre-war neighborhoods and social groupings. Size will vary greatly.

Note: The average size of a Warsaw family is 3.8 to 4.0 persons.

viously owned by the central government, which were naturally extensive in the national capital.

The change from private to public ownership of land was made easier by the devastation. Much private land was absolutely without ownership, because the owners or their heirs had been killed. Existing owners of single lots are to be compensated, and given priority in leasing the land formerly owned or in leasing other sites. But owners of more than one lot will be compensated for only one lot, because nearly all such owners were land speculators profiting either from the chaotic economic situation that prevailed during the war or before it.

The new Warsaw plan proposes to work profound changes in the traditional structure of land values—not an unimportant detail when it is remembered that one of the principal sources of municipal revenue will be the land rents. Swift transportation is counted on to dissolve the pyramids of high values in the central area, distributing value more evenly over the entire metropolitan area.

A final result of the elimination of privately owned land is to relieve the planning authorities from the usual pressures of special interests, and to establish the base for a disinterested criticism of the city plan by organizations and individuals. The decision to municipalize all urban land was one reason why the pre-war city plan was of little value and could not be used. That plan had been at best a series of compromises with special interests and landowners, most of whom no longer exist. In addition, the whole central business and commercial districts—which had been the nucleus of the pre-war plan—were destroyed. Hence the plan is new, even though it bears a strong resemblance to its predecessor.

Industrial areas replanned

One of the principal reasons behind the political changes in Poland is the firm conviction that only through better organization can the nation's limited resources be expected to produce a high standard of living. This conviction is expressed in the standards for new industrial areas in Warsaw, both in respect to their high degree of efficient organization and their high social standards. The industries may be grouped as 1) those Warsaw needs; and 2) those that need Warsaw.

Since the municipality owns all urban land, it can control the location of industry. Since many of them are also ownerless and/or destroyed, and since all enterprises employing over 50 persons have been nationalized, relocation will not be too difficult. Little compulsion will be necessary anyway because of the inherent attraction of industry to the sites provided, and the abundant facilities for industry contained in the plan. The standards of industrial location have been developed in careful consultation with the industries concerned, and meet with their approval.

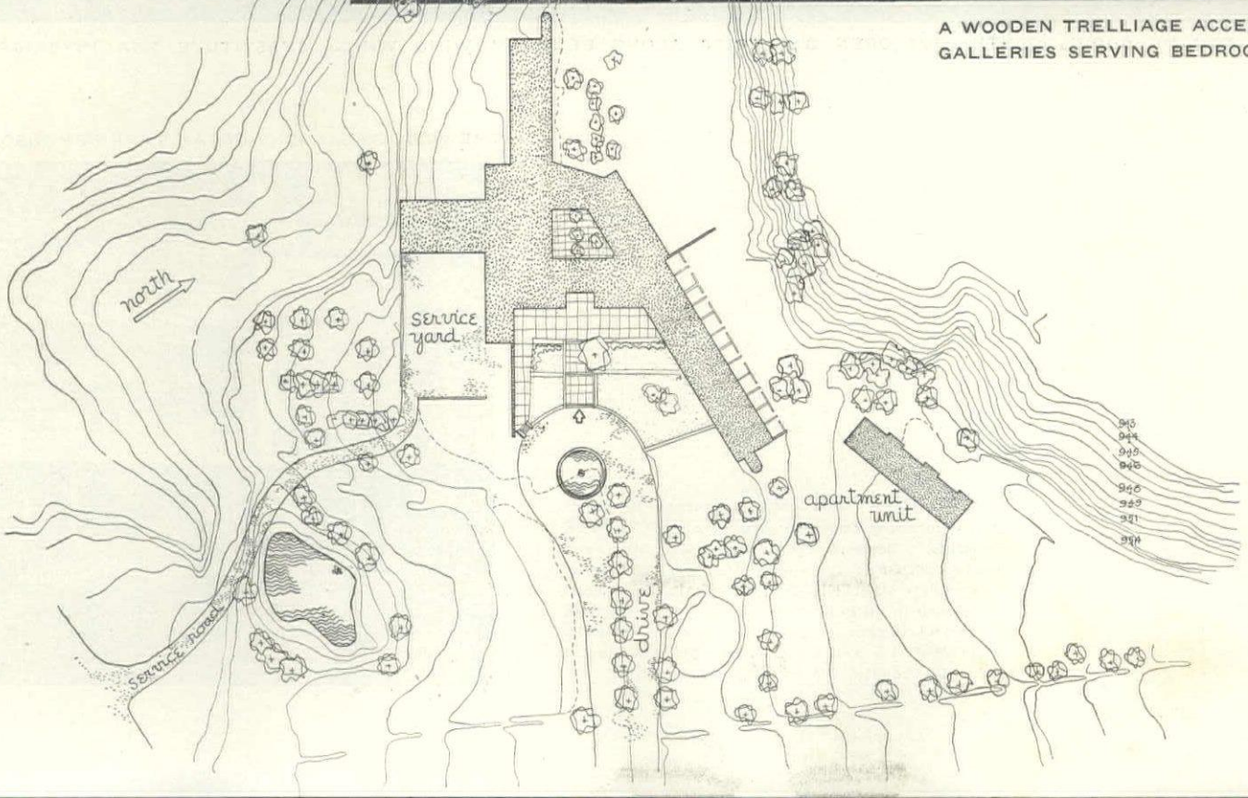
The service industries are those producing food, clothing, power, printing and chemicals. Other industries centered in Warsaw, and utilizing her skilled labor and technicians, are optical goods, precision tools, hardware and luxury products. These industries have been classified according to location requirements within the city, and as to whether or not they are prejudicial to amenity. Thus, the lighter industries with large labor requirements and the need for highly skilled scientific and technical personnel are located close to the city. The heavy industries, and the abattoirs, gas and electric plants, chemical industries and tanneries have been located down-wind to the northeast at Zeran, where they are close to water transport and adjacent to heavy rail and truck routes to other parts of Poland. *(Continued on page 132)*

AVILA HOTEL

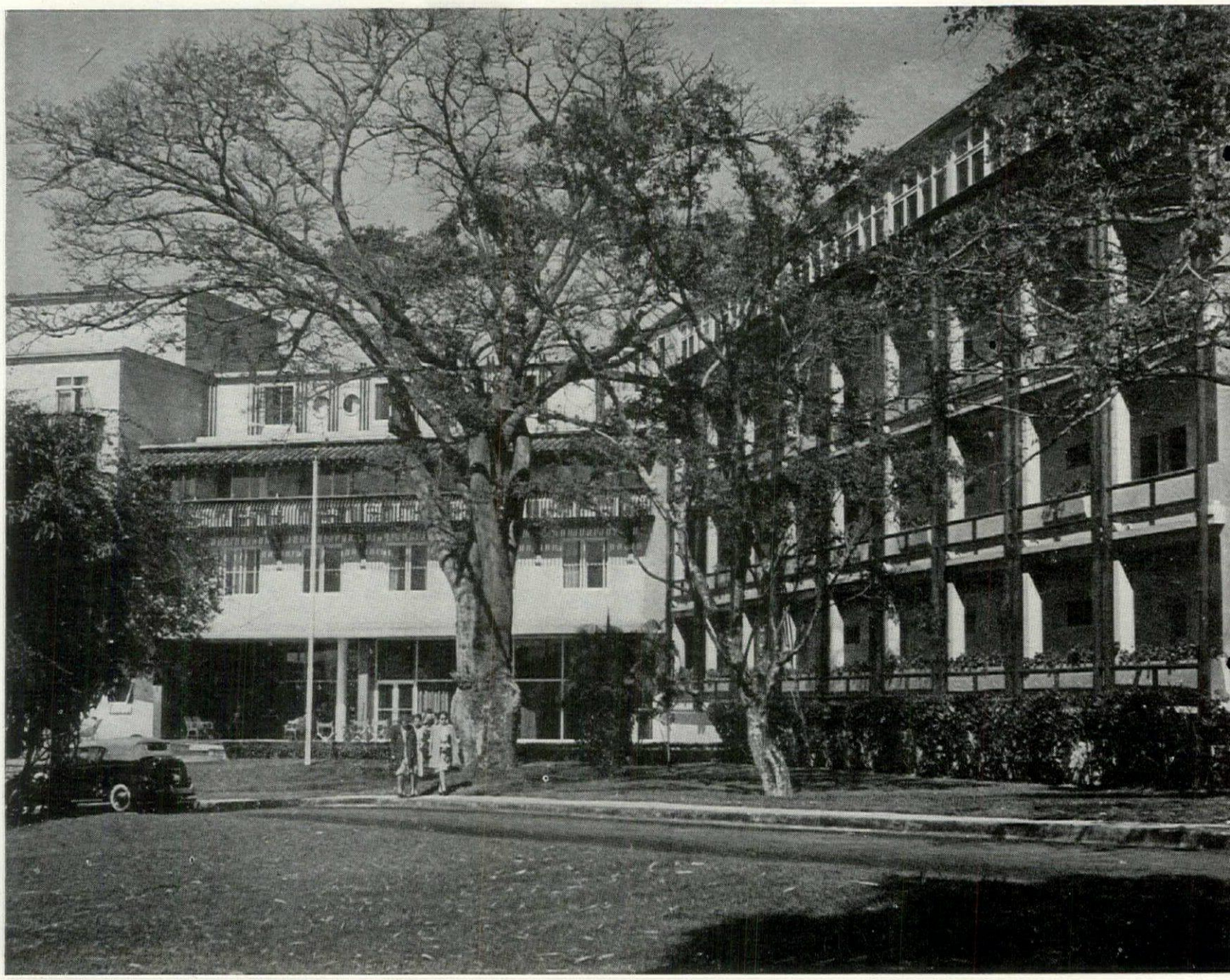
American architects Harrison, Fouilhoux and Abramovitz design a luxurious hostelry for an Andean city.



A WOODEN TRELLIAGE ACCENTS OPEN GALLERIES SERVING BEDROOM WINGS

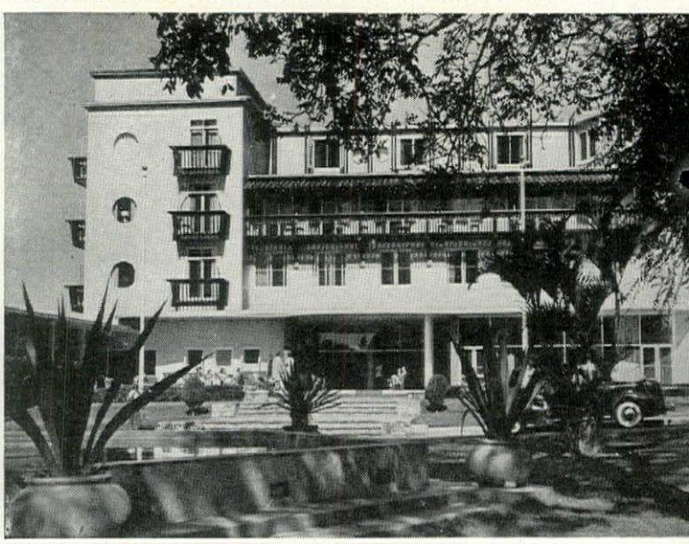


Situated on a hilltop in Venezuela's capital, the new Avila Hotel is desi



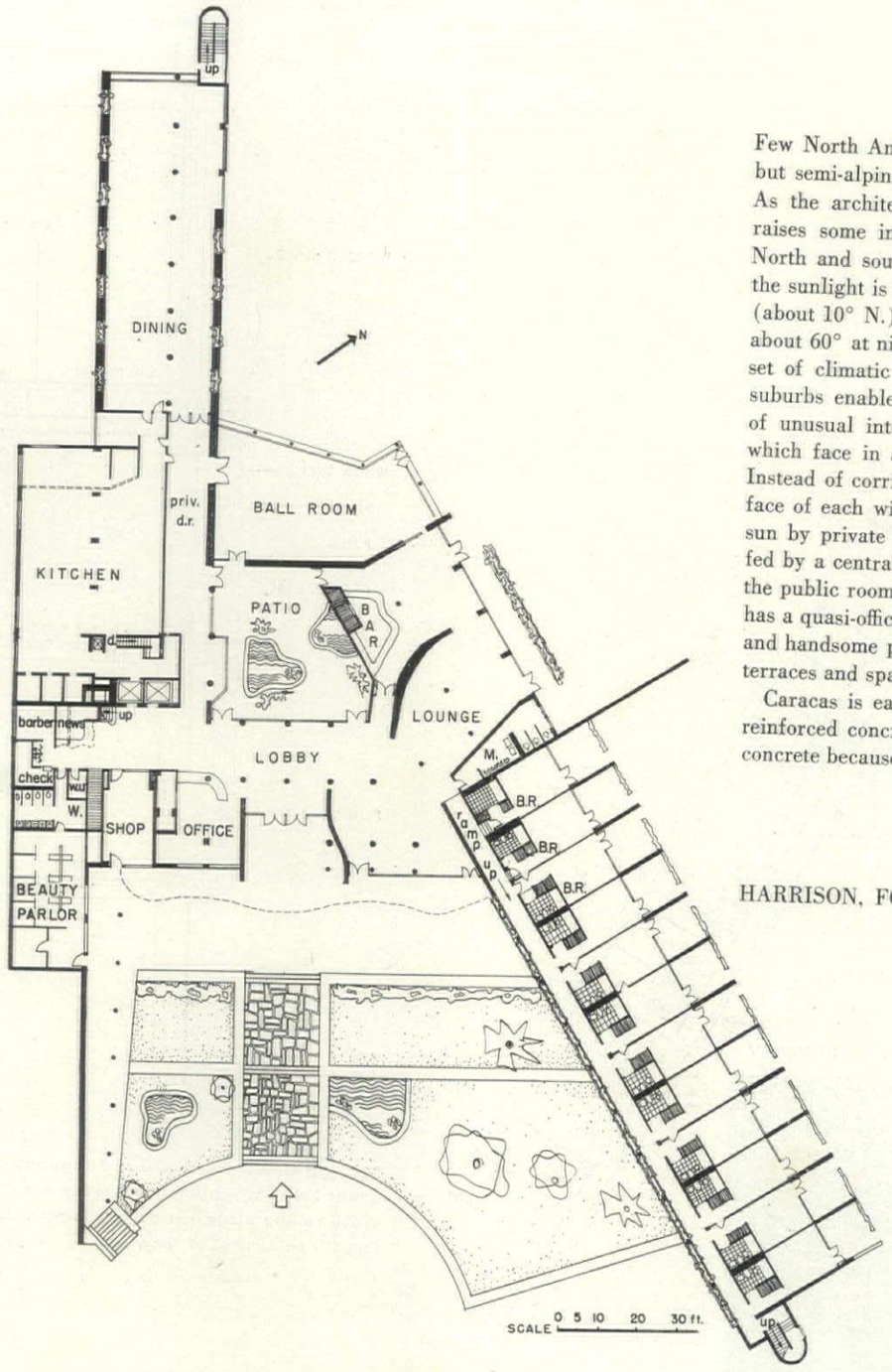
ENTRANCE FACADE SHOWS CONTINUOUS OPEN GALLERIES ALONG BEDROOM WING WHICH SUBSTITUTE FOR INTERIOR ACCESS CORRID

THE WOODEN BALCONY DETAILS ARE REMINISCENT OF OLDER ST



CONSTRUCTION OUTLINE: Earthquake-resistant reinforced concrete structure: EXTERIOR WALLS: Cement stucco, painted blue and yellow. ROOFS: tar and gravel, terra cotta tile, on concrete slab. FLOORS: Asphalt tile on concrete slab in all bedrooms, baths and shops; terrazzo and precast terrazzo tile elsewhere. INTERIOR WALLS and CEILINGS: Smooth plaster painted; acoustic tile in main dining room.

house visiting big-wigs luxuriously in one of the world's oddest climates.



Few North American architects have had to design for an equatorial but semi-alpine climate like that of Venezuela's capital city, Caracas. As the architects of this South American hotel soon discovered, it raises some intriguing problems in orientation, structure and plan. North and south exposures become equally suitable for living areas; the sunlight is intensely bright, but the altitude (3,000 ft.) and latitude (about 10° N.) combine to keep the air temperatures moderate (from about 60° at night to 78° in daytime) and stable the year round. This set of climatic factors and a magnificent hilltop site in the Caracas suburbs enabled the architects of the Avila Hotel to evolve a design of unusual interest. A three-pronged plan provides bedroom wings which face in all directions, enjoying excellent views and exposures. Instead of corridors the mild climate permits open galleries along one face of each wing, while all bedrooms are protected from the midday sun by private balconies on the other side. These bedroom wings are fed by a central stair and elevator tower which leads directly down to the public rooms. As the only large modern hotel in the city, the Avila has a quasi-official status. This fact in large measure explains the large and handsome public rooms on the first and second floors as well as its terraces and spacious grounds.

Caracas is earthquake country: hence the structure is fireproof, of reinforced concrete throughout. The climate, incidentally, is ideal for concrete because of its small temperature fluctuations.

HARRISON, FOUILHOUX and ABRAMOVITZ, Architects

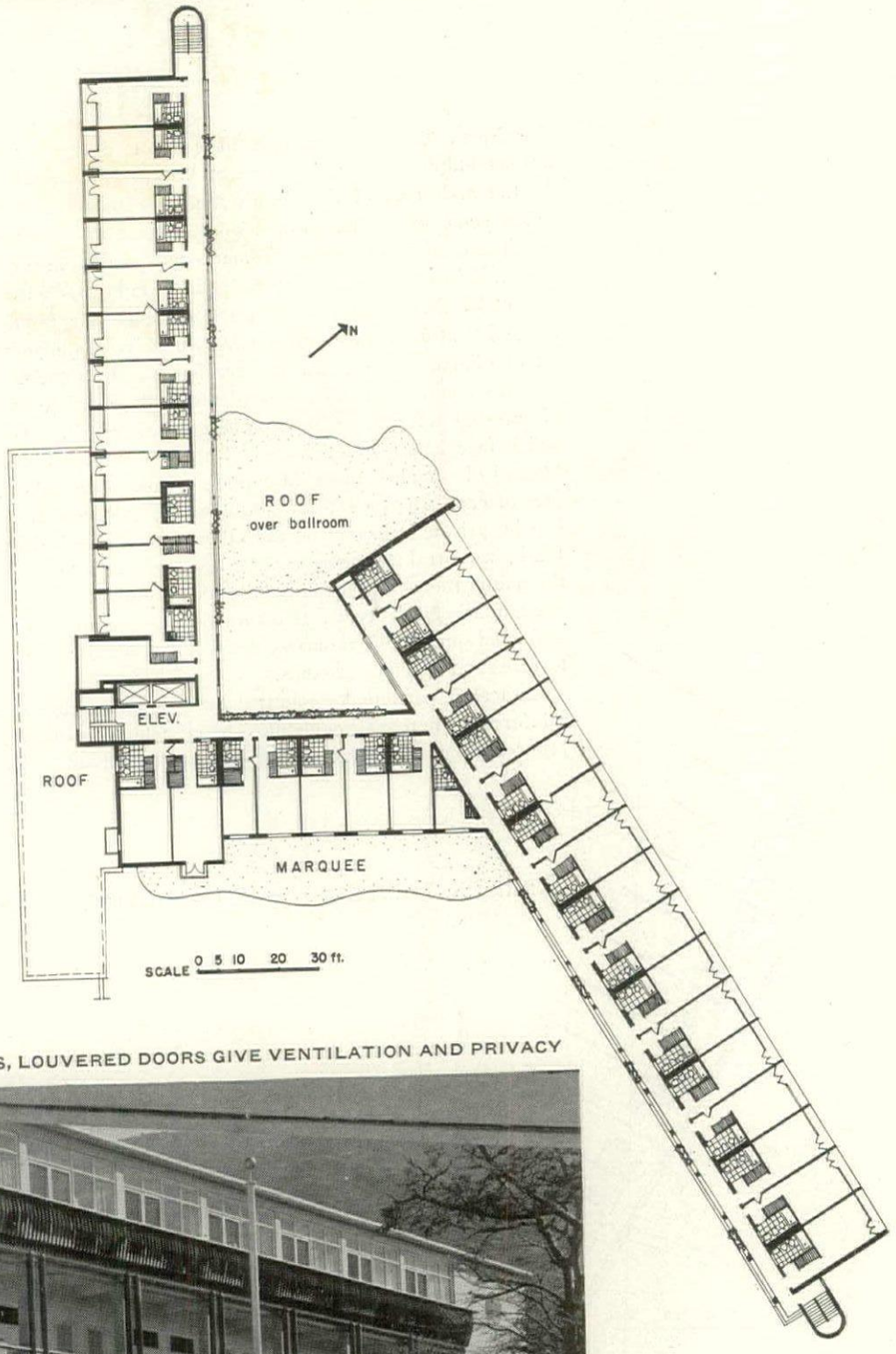
ENTRANCE TERRACE SEEN FROM LOBBY

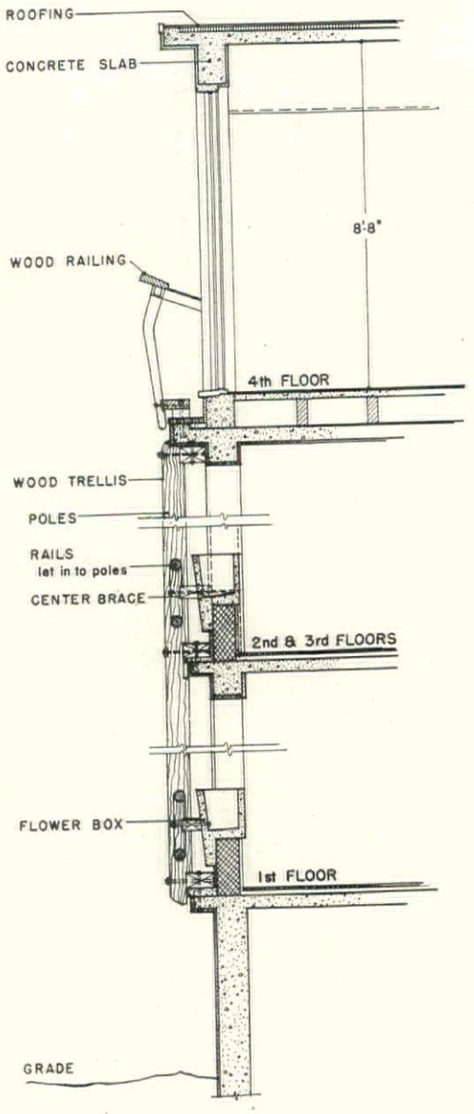


TERRACES ARE PAVED WITH PRECAST, TERRAZZO TILE IN BLACK AND WHITE



All bedrooms in the Avila look out towards the Andes or down over the city.



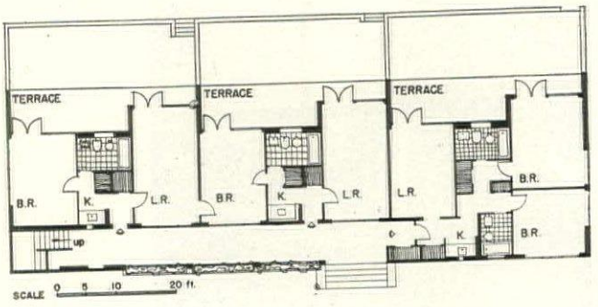


SECTION shows construction of continuous concrete flower boxes which line galleries in bedroom wings. Wood railing along top gallery is profiled for comfortable enjoyment of the view.

HIGH WINDOWS, LOUVERED DOORS GIVE VENTILATION AND PRIVACY



THE HOTEL has proved so successful that—two years after its completion—a fourth floor was added to the main building (right) and this detached block of apartments built in the grounds nearby.



HOUSE IN PIEDMONT, CALIF.

An unusual relationship of owner, architect and designer creates a home of outstanding beauty and usefulness, carefully fitted to a steeply sloping site.



OWNER



ARCHITECT



ARCHITECT-DESIGNER

"I reasoned that two good heads would do a better job in designing a house for my wife than just one. I tried the idea out on several of my architect friends, all of whom thought I was crazy. Their reaction convinced me that the idea was sound." So saying, famed California architect Clarence Mayhew asked equally famed British architect Serge Chermayeff to collaborate in the design of a home for Mrs. Mayhew. The idea did not seem crazy to Chermayeff who from his own experience had found that "if an architect designs his own house it becomes a laboratory experiment, whereas, if another architect does it, it is a solution." Mrs. Mayhew, accustomed to the ways of architects, was not dazzled by this array of talent, knew what she wanted and stuck to it. Thus, in 1941, began a unique association that produced the distinguished residence shown on these pages.

The Mayhews had purchased a lot 90 by 225 ft. in a well-to-do suburb of Oakland. The site, formerly part of the garden of a large estate, was in fact a grove of unusually handsome live oak trees on land sloping steeply to the southeast, with a pleasant view to distant hills. Ground-ivy covered the land beneath the trees. The first duty of the designer, then, was to disturb as little of the natural beauty of the site as possible, which meant placing a house of considerable size on a steep slope with a minimum of grading and tree removal, while at the same time meeting all other requirements.

The program established by the collaborators was that the house be separately zoned for the activities of adults and children, so that each could function independently. Also, it was desired that all living and sleeping rooms face south, with large glazed walls to admit view and sunshine. As much private garden space as possible was requested for the pleasure of indoor-outdoor living. Construction was to be in the manner typical of California, and costs were to be held to a minimum consistent with good design, materials and workmanship.

With the requirements of site and owner well in mind, the designer set to work, producing thirteen or fourteen different schemes, in all cases illustrated by three-dimensional sketches and small scale models. Eventually, architects and client came to unanimous agreement on a scheme which "answered 90 per cent of the problems."

After the basic scheme had been completed, Mayhew's office staff took over preparation of working drawings and specifications. Meanwhile Chermayeff went on to establish typical details and elevations, making perspective sketches in colored crayon and pencil, some of which are shown on the following pages. "The reason for making sketches," says Chermayeff, "is that in dealing with a three-dimensional problem—which architecture is—you have to think three-dimensionally on paper to test the idea in your head. You cannot possibly do that by limiting yourself to plans, sections and elevations; you have to go to a basis of what the eye really sees."

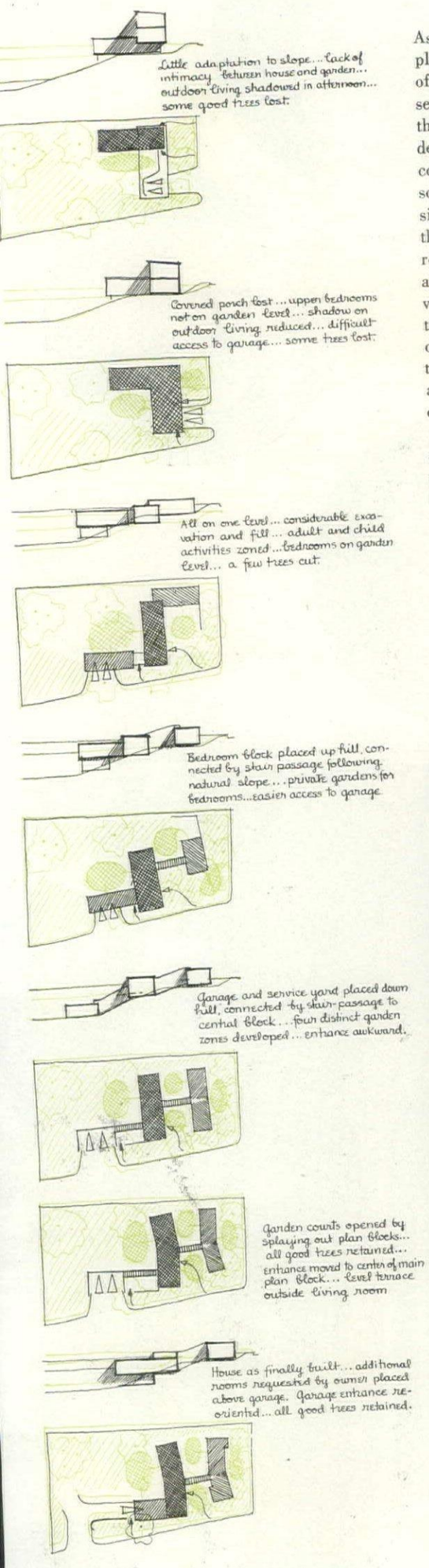
CLARENCE MAYHEW and SERGE CHERMAYEFF, Associate Architects; SERGE CHERMAYEFF, Designer

Photos: Roger Sturtevant

TERRACE FACADE HAS CRISP ELEGANCE TYPICAL OF WHOLE HOUSE



By informally distributing the main elements along a sloping site, a plan of rare interest and practicality was obtaine

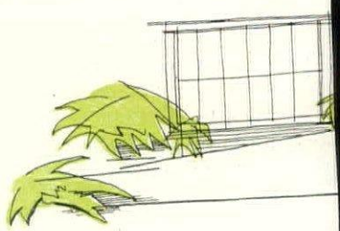


As the series of site plan studies on this page plainly shows, the final solution of the problem of placing a house on the site was achieved by separating sleeping, living, and car storage into three separate units, locating these units in a descending order on the natural slope, and then connecting them by two stair-passages. Such a solution overcomes the fault so often seen in hillside houses: plenty of view but isolation from the actual ground. Here, however, all important rooms have a view and open directly on a garden area. Privacy from the street to the east is provided by the service wing for the adult living terrace, and by the upper stair-passage for the children's play terrace. Service and auto entrances are out of the way on the lowest level, allowing the main entrance to take full advantage of the romantic approach.

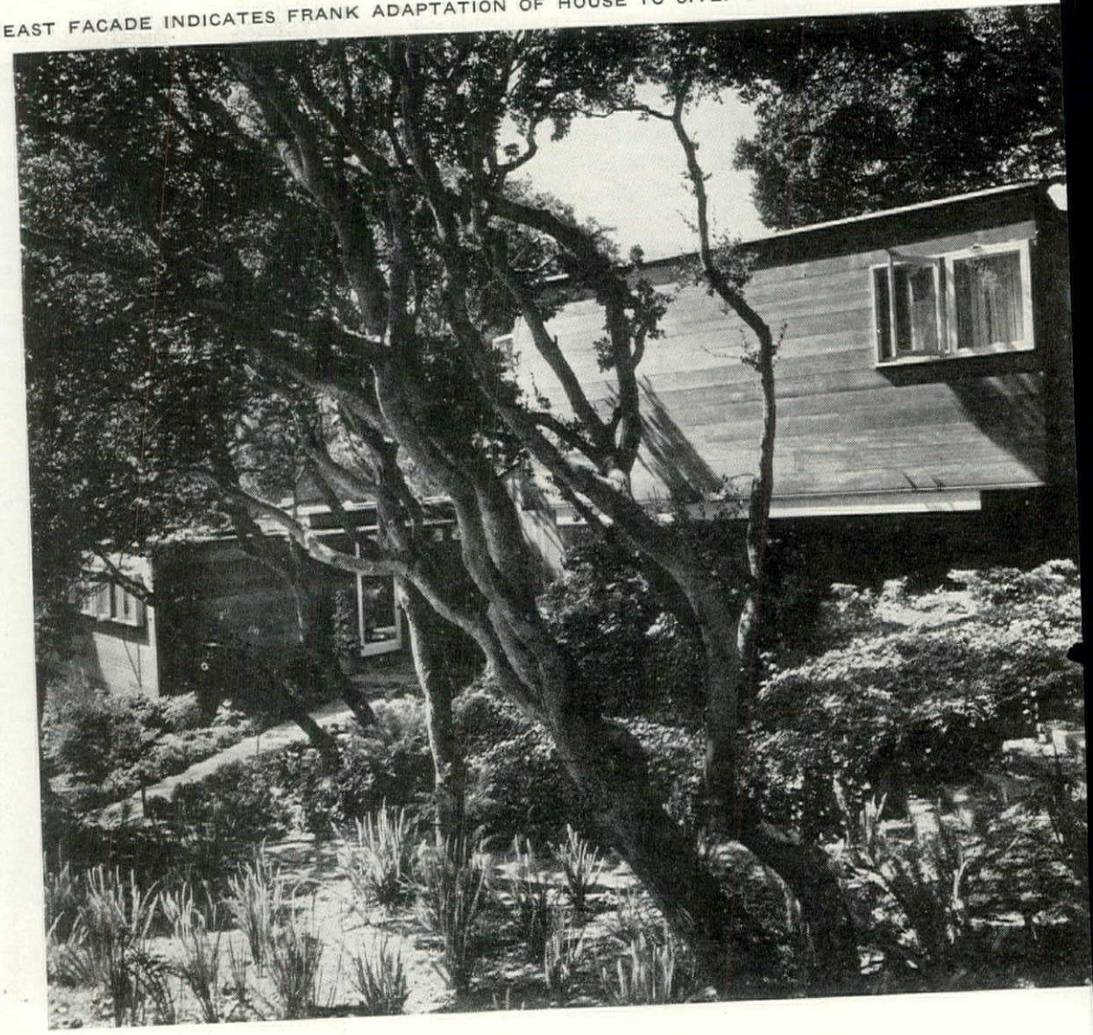
The plan of the central block is zoned for adult and child activities, with the kitchen and pantry as the intermediate link. Especially convenient is the large children's playroom adjoining both the pantry and maid's room for ease of supervision. After the children have retired, the playroom can serve as a living space for the maid. A stair leads down beside the pantry to the garage, laundry and storage space below.

The upper bedroom block also thoughfully separates adults from children, each group being given proper individual facilities. Especially noteworthy are the well-conceived drawer and hanging units, as well as the fine baths. Partitions in the children's area are removable to accommodate the inevitable spatial adjustments of a family with children.

Circulation within this dispersed plan is one of its most interesting features. To admit view and sunshine to each room on the south, it was necessary to place all circulation along the north side. On the living level, the main entrance occurs at the north, with the visitor passing a long screen to enter the living room itself. Similarly the connecting passage for the children's rooms on the sleeping level is at the north. Lower and upper circulation passages are connected by the unique stair-passage, rising along the natural slope of the site, with the charm of growing plants on one side and of a garden court view on the other.



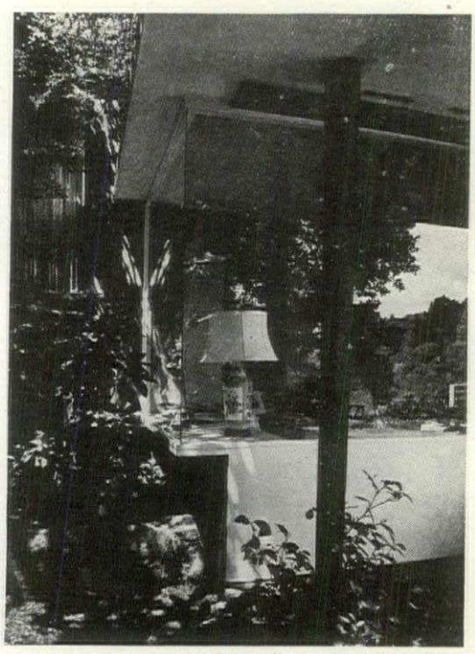
EAST FACADE INDICATES FRANK ADAPTATION OF HOUSE TO SITE. BEDROOM WING IS AT RIGHT



ned" into sections for conflicting activities.



Masterly wooden construction, eliminating all superfluous members, produces wide windows and spacious interiors.



LIVING ROOM WINDOW HAS GLAZED CORNER

Economy and appropriateness demanded that the Mayhew house be built in the wooden tradition prevalent in the region. But the same careful study that went into the plan was also given to the construction. Multiple elements, especially at the windows, were eliminated if they were not actually needed for structural reasons. Such elimination increased the openness and lightness of the house. It also required a finer craftsmanship, for framing usually overlaid by mill-made parts was now exposed.

Fortunately, Mayhew's father is a retired contractor, and much of the precise beauty of construction is due to his care. Practically no subcontracts were let, the work being done by directly hired labor with directly purchased materials. Supervision was constant and sincere. "It was a personal kind of act—not a case where you have never seen the contractor before and will never see him again," Chermayeff remembers with pleasure.

Foundations are of cast concrete, designed in many places to allow the house proper to overhang on all sides—a great aid in providing the ant traps universally required in California. Floors are composed of three-quarter inch sub flooring, covered by quarter inch plywood, and surfaced with asphalt tile. Walls are of two by fours, faced on the outside by 1 in. unpainted redwood planking over 30 lbs. felt, and on the inside with quarter inch plywood or plaster board. Plaster is used in the baths only. Ceilings are of fiber board, and no other insulation is provided in roofs and walls. Heating is by forced hot air from two separate units located on the sleeping and living levels.

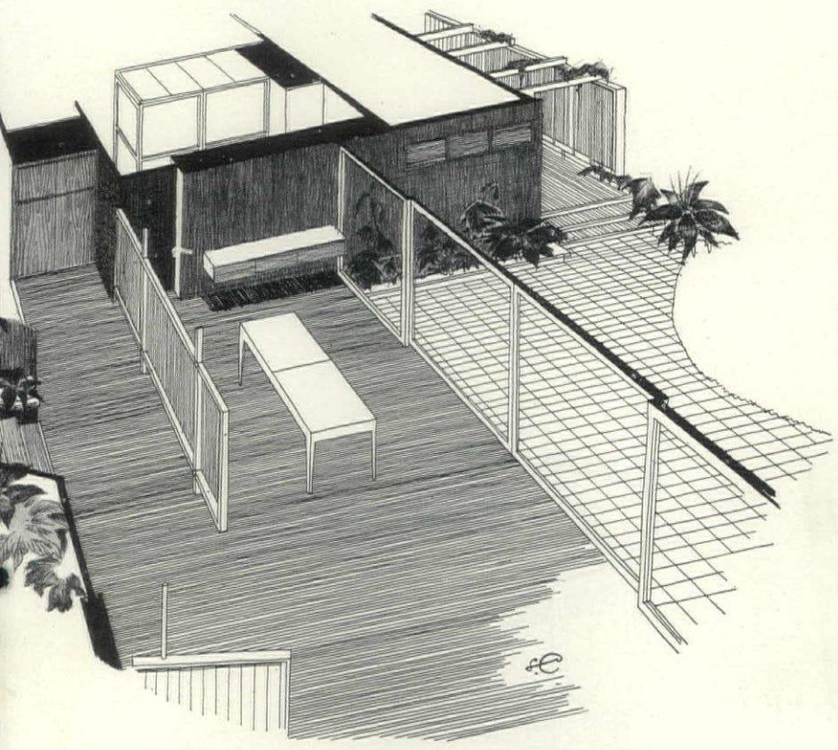
An interesting construction detail is that of the living-dining area ceiling. This inside space is spanned by joists 22 ft. in length. On the window side the joists are supported on a heavy longitudinal beam resting on free standing posts. Beyond the post line, a sun shade projects four feet. This projection is obtained, not by extending the roof joists, but by thinner members spiked to the sides of the main joists. Such a system gives lightness to the profile of the sun shade, and produces an elevation expressive of the true nature of the structural loads involved.

Interiors have been designed in an effort to reinforce the relation of inside and outside space provided by the plan. Ceilings are continuous from interior to exterior, windows are treated as an almost incidental interruption. Exterior materials are continued into the interior, as, for example, where redwood planking on the side of the children's playroom carries through to form one wall of the dining area. Sketch, below right, shows combination living-dining room.

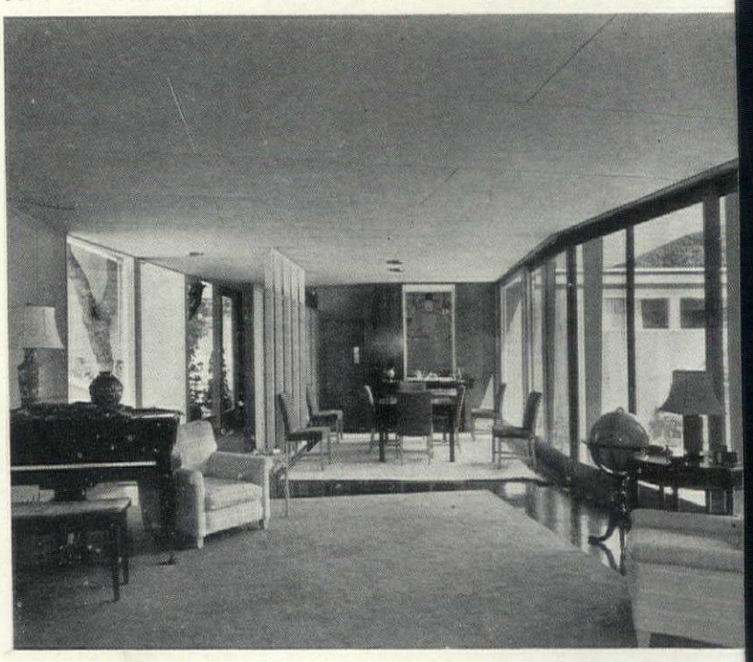
WINDOWS AND SCREENS IN DINING AND LIVING AREAS SLIDE BACK TO OPPOSITE ENDS, PROVIDING ANY DESIRED OPENNESS TO TERRA



E STANDING WOODEN POSTS CARRY LOAD OF LIVING-DINING ROOM ROOF INDEPENDENTLY OF SOUTH WALLS, COMPOSED ENTIRELY OF GLASS



SLATTED WOOD SCREEN SEPARATES HALL FROM DINING AREA



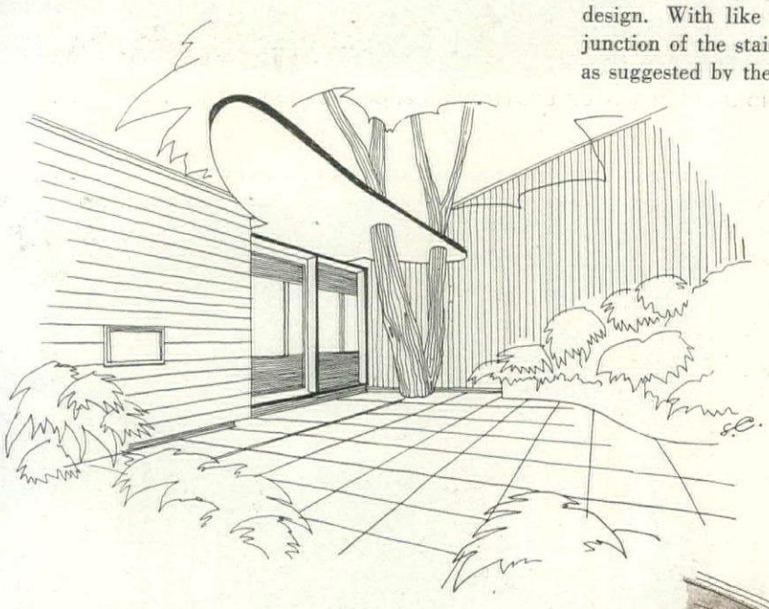
One of the interesting features of the house is its successful integration of European and American trends in modern architecture. Mayhew began his architectural practice in California in 1932, and is steeped in the American tradition of wood construction as modified and enlivened during the past decade in California. Chermayeff came to America in 1940 from England where he was one of the leaders in the English school practicing in the crisp, so-called International Style. It is rare for two designers of such different schooling to work together—much less, to produce a house which is a subtle blending of their points of view.

The resulting house is un-Californian in many details, but especially in not having a low-sloping roof with overhanging eaves and exposed rafters. Its neat white lines tie in the redwood surfaces at the top and bottom—"a true rectangular plan floating in space" on its undercut foundations. But it is endowed with a human quality typical of California's best work and rare in the International Style, and it is built of materials and in a manner traditional in America.

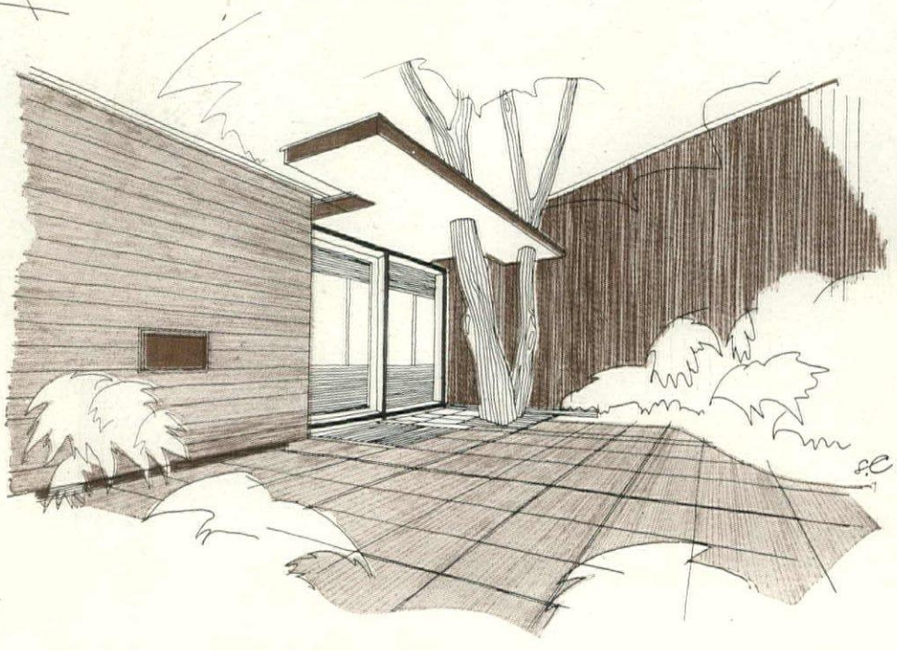
Architects will respect the care with which Chermayeff approached each detail of the design. For the important entrance to the house he made at least a dozen quick perspectives, two of which are shown below. Each had something to contribute to the proper visualization of the final design. With like zeal he studied the difficult junction of the stair-passage with the lower hall, as suggested by the sketch on opposite page.

CONSTRUCTION OUTLINE

FOUNDATION—reinforced concrete. Waterproofing—cold emulsion. STRUCTURE: Exterior walls—vertical grain redwood, 30 lb. felt, studs; inside—wood veneer and plaster board. FLOORS—plywood and asphalt tile. ROOFS—5-ply tar and gravel. INSULATION: Roof and sound insulation—Insulite board, The Insulite Co. FIREPLACE: Damper—Miller Co. SHEET METAL WORK—galvanized iron. WINDOWS: Sash — wood. Glass — plate. FLOOR COVERINGS: Main rooms—asphalt tile, Johns-Manville. Kitchen and bathrooms—linoleum, Armstrong Cork Co. WALL COVERINGS: Main rooms—veneer, U. S. Plywood Corp. Halls, kitchens and bathroom—Sheetrock, U. S. Gypsum Co. PAINTS—W. P. Fuller and Pratt & Lamber, Inc. HARDWARE—Schlage Lock Co. ELECTRIAL INSTALLATION: Wiring system—knob and tube. Switches—General Electric Co. KITCHEN EQUIPMENT: Range, refrigerator and dishwasher—General Electric Co. Fan—West Wind Corp. LAUNDRY EQUIPMENT: Washing machine—Bendix Home Appliances, Inc. BATHROOM EQUIPMENT—Crane Co. PLUMBING: Soil pipes—cast iron. Water pipes—copper, Muller Brass Co. HEATING: Warm air system, Water heater—Crane Co.



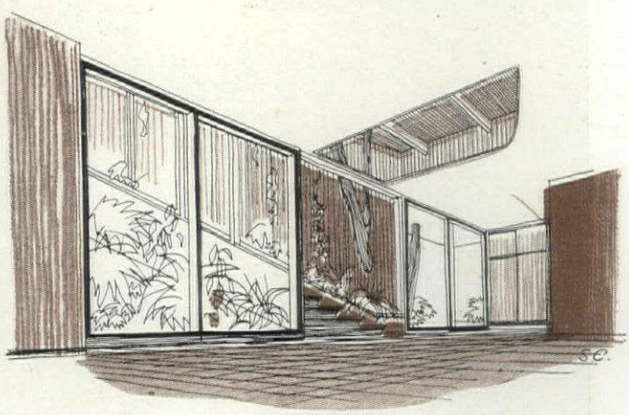
Canopy form "too free" and competetive with freedom of natural tree shapes. The rectangular plane, less dramatic, still pulls the trees by entrance into composition.



AZED STAIR-PASSAGE LEADING FROM LIVING TO SLEEPING LEVELS MAKES A BEAUTIFUL FEATURE OUT OF A BORING NECESSITY

N ENTRANCE IS LOCATED NEAR CENTER OF HOUSE AT LOWER END OF STAIR-PASSAGE

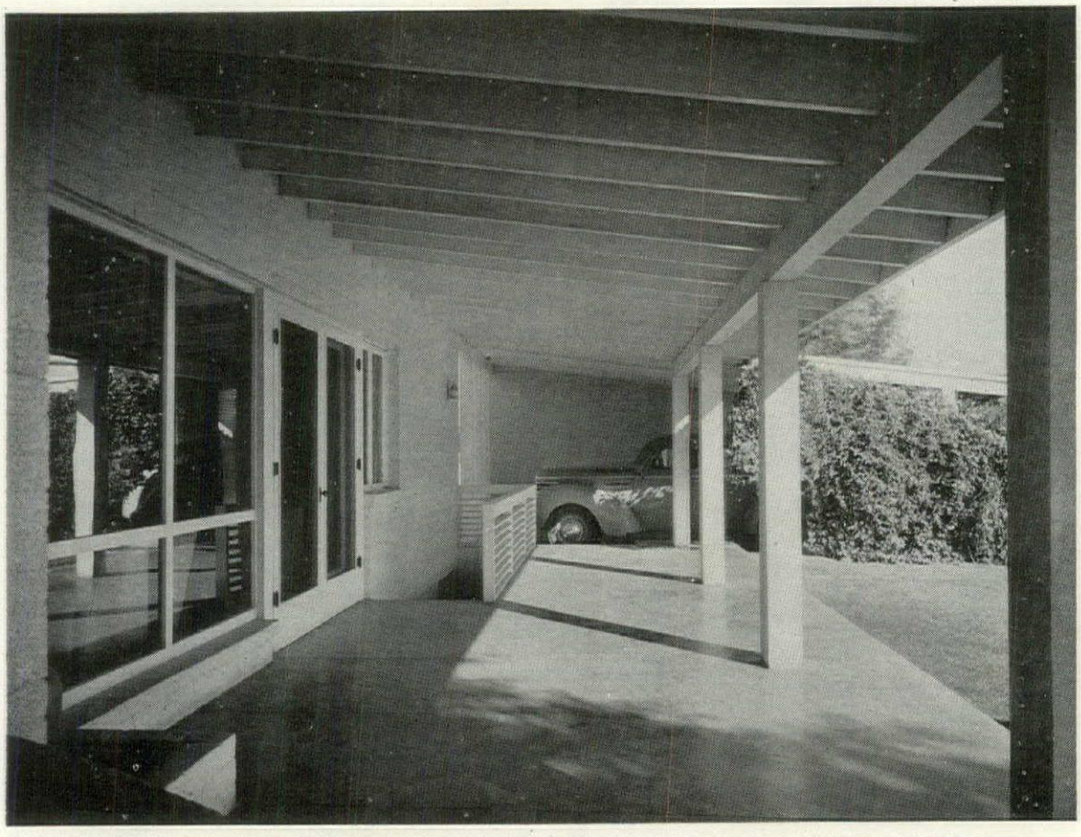




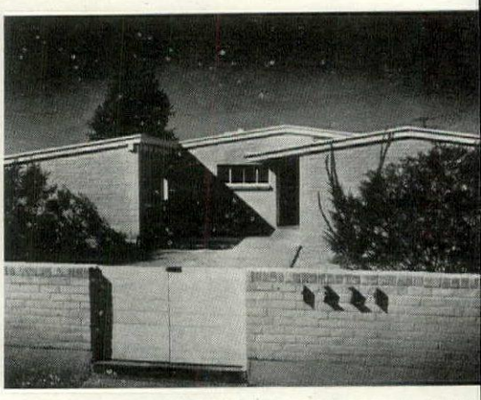
The stair is virtually a covered garden path between the two blocks. Both stair and hall are part of outdoors, curtained off by glass.

Photos: Maynard C. Parker

HOUSE IN DENVE



LARGE SOUTH PORCH ADJOINING LIVING ROOM OPENS ON WALLED-IN LAWN AWAY FROM STREET

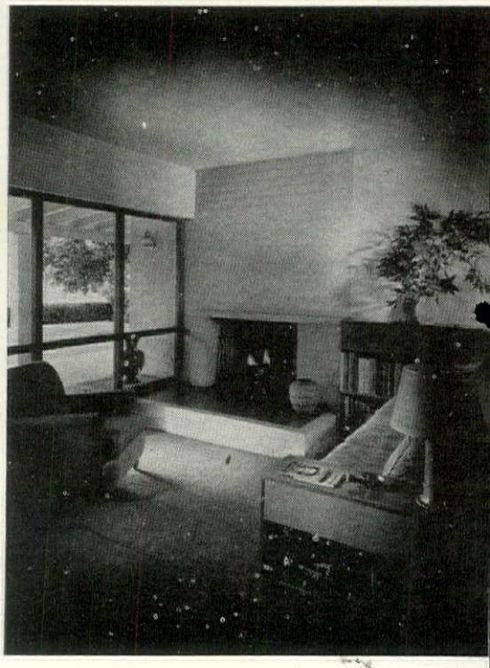


LOW-PITCHED GABLES AS SEEN FROM FRON

STREET ENTRANCE IS DIRECTLY TO LIVING ROOM, WHICH ALSO OPENS ON PORCH AND GARDEN

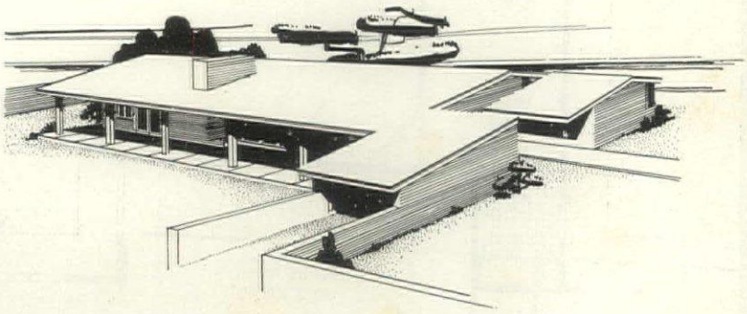


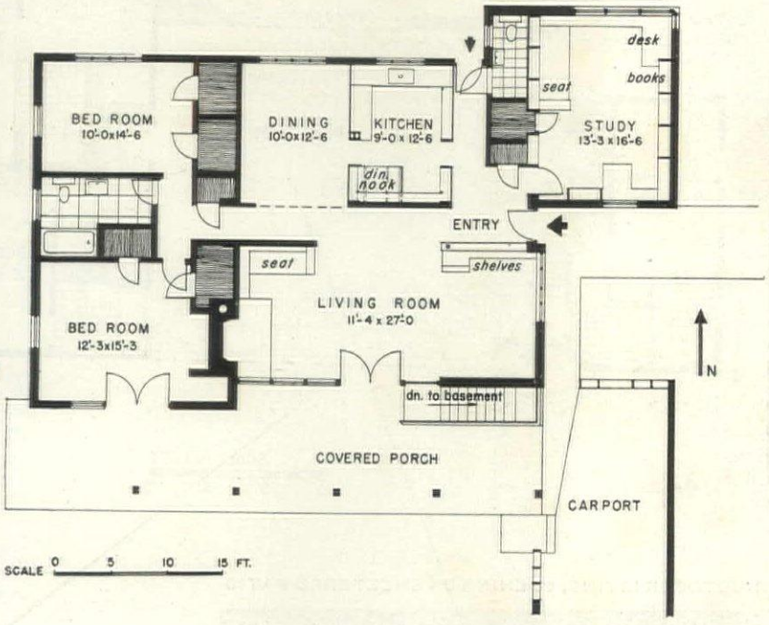
BRICK FIREPLACE HAS RAISED HEARTH



Carl H. Riesen adapts classical severity to the land of easy ranchhouse architecture.

JOHN W. JOYNT, General Contractor





Contemporary in spirit, this house recalls the lines of buildings in the Mediterranean countries—arid lands of bright, hot sunshine. Features of the low, one-story plan are its avoidance of glare and heat, and its easy workability for the needs of the two elderly residents, parents of the architect. In the words of the owner, "the deep south porch the entire length of the house takes the sun's glare off the abundant windows and makes delightful extra living space. The carport open toward the porch is extremely convenient—no doors to open or close, no hot sun or rain to expose yourself to. Only about 15 per cent of the window space receives direct sun—the windows on the east and west ends. The balance is on the north or on the south side protected by the wide porch roof. An evaporative cooler installed at one end of the basement draws air from a grille in a door at the opposite end of the room. A disadvantage of this arrangement is that outside air coming through the length of the room deposits a needless amount of dust."

To simplify the work of cleaning, many pieces of furniture, ample closets and storage space have been built in. Lithochrome and waxed cement floors (except in the living and dining rooms, where there is hardwood) add to ease of maintenance.

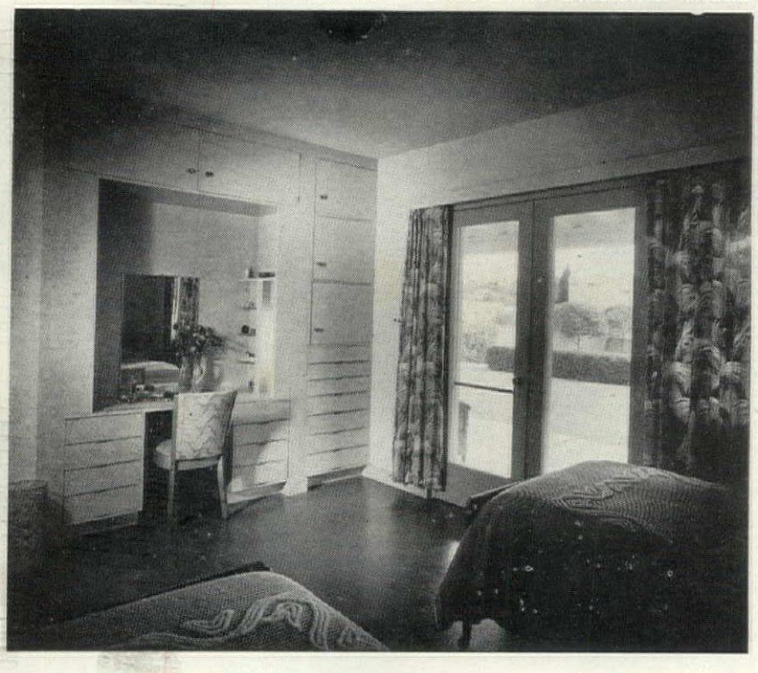
CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—9 in. common brick. Floors—oak or concrete on gravel fill. Ceilings—plaster and Douglas fir. ROOFING—Johns-Manville. INSULATION: Attic floor—rockwool, Johns-Manville. SHEET METAL WORK: Flashing and ducts—galvanized iron. WINDOWS: Sash—steel casement, Soule Steel Co. Glass—Libbey-Owens-Ford Glass Co. FLOOR COVERINGS: Living room—oak. Bedrooms and halls—colored concrete. Kitchen—linoleum, Armstrong Cork Co. PAINTS: Exterior—Textolite, United States Gypsum Co. WOODWORK: Trim—Douglas fir. Cabinets—plywood. Doors—Paine Lumber Co., Ltd. HARDWARE—Schlage Lock Co. KITCHEN EQUIPMENT: Range—General Electric Co. Refrigerator—Shelvador, Crosley Corp. BATHROOM EQUIPMENT: Fixtures—American Radiator-Standard Sanitary Corp. Cabinets—Hall Mack, Hallenscheid & McDonald. HEATING—forced air gas furnace with evaporative cooler with blower using same ducts. Chronotherm—Minneapolis-Honeywell Regulator Co. Water heater—Continental Water Heater Co.

LOW BUILT-IN CUPBOARDS GIVE SHELF SPACE IN DINING ROOM



ONE OF TWO LARGE BEDROOMS HAS BUILT-IN DRESSING TABLE

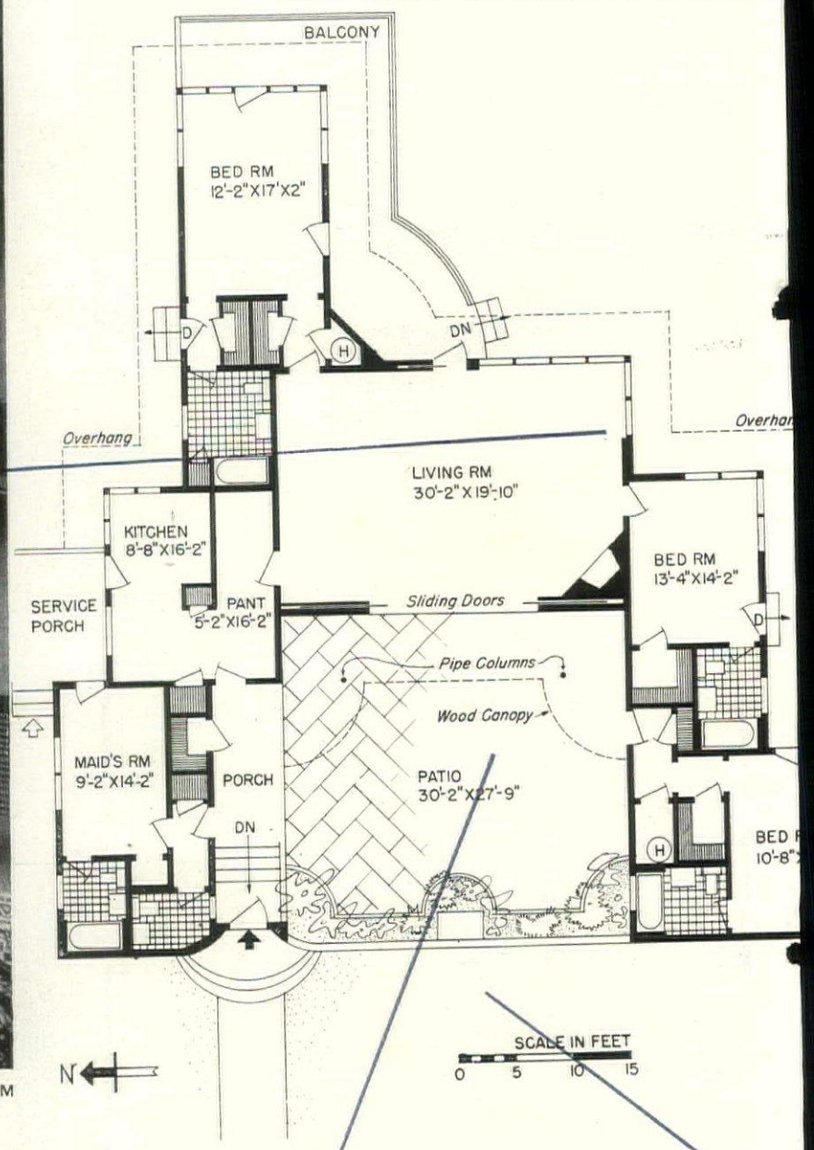


Photos: Roger Sturtevant

HOUSE IN PALM BEACH



DINING SPACE IS AT WINDOWLESS END OF THIRTY-FOOT LIVING ROOM



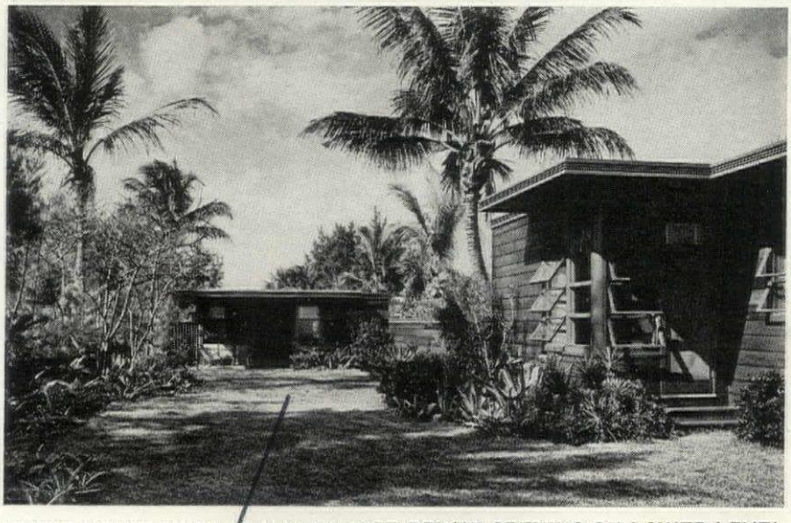
MOVABLE GLASS DOORS OPEN TO CREATE CONTINUOUS SPACE FOR INDOOR-OUTDOOR LIVING, OPENING ON SHELTERED PATIO



Built low on the dunes to withstand the winds and damp. Treanor & Fatio, Architects.



TWO BEDROOMS ON SOUTH EACH HAVE CORNER WINDOWS FACING OCEAN



GUEST HOUSE IN BACK HAS GARAGE BELOW OPENING ON LOWER LEVEL

SMITH & YETTER, General Contractor

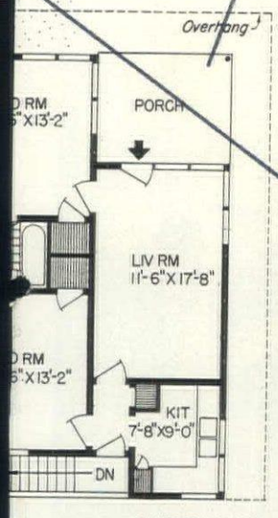
"Sandreef", designed for the Prince and Princess Zalstem-Zalessky, is a challenge to hurricanes. It was the client's theory that wooden boat construction withstands saturation dampness, and the architect's idea that one-story height withstands the 90-mile winds from the Gulf. So the house is of low frame construction, in plan something like an "h" or a chair lying on its side, with the back (containing owner's suite) pointing towards the ocean, and the legs (enclosing the patio) towards the shore. Service rooms are on the north side of the patio; guest rooms on the south. There is an adjacent guest-house-garage further west where the ground slopes away, with garage on the first floor opening at a lower level.

Princess Zalessky, many of whose ideas went into the design, thinks "this modern house has several uniquenesses: Its administration and upkeep are twice as easy and time-saving as in a traditional house. A tremendously gay and cheerful atmosphere is created by the lightness and airiness of the interior, due to the large surfaces of glass. The patio, being enclosed on four sides, serves as an outdoor living room; and the fact that the walls opening on the patio are made of movable sheets of glass which when pushed back create the impression of one enormous living room, half indoor and half outdoor, gives this rather small house the feeling of a very large and spacious one. Having lived in a modern house, one returns to the traditional with less patience for its illogical features and time-consuming irrelevance and unfunctional details.

" 'Sandreef' combines the functional and the exotic; the latter quality is often lacking, though quite unnecessarily so, in modern houses. The interior walls and ceiling of striated fir pickled with white lead—a richly textured design rather like a modern Gothic linen fold—is an ideal background for modern paintings or simple primitive Chinese paintings and sculpture, which I have used together with modern. Another reason for the use of wood is that the house is located only a few feet from high tide, directly on the ocean, and plaster or stone would collect dampness, while wood remains dry. It is interesting that everyone who visits the house is enthusiastic about it—even the most conventional people."

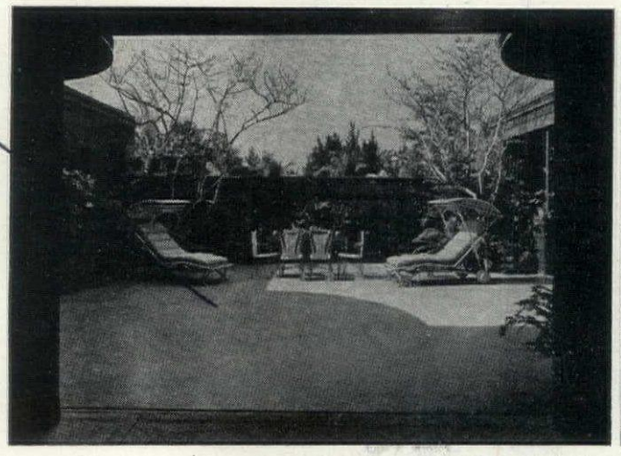
CONSTRUCTION OUTLINE

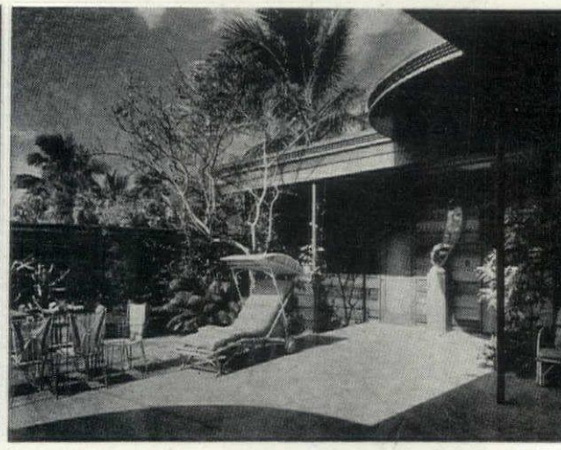
FOUNDATION—reinforced concrete piles; walls of reinforced concrete beams; 6½ in. reinforced concrete slab. STRUCTURE: Wood frame, exterior California redwood siding; fir plywood. Floors—Cement finish and wood. Ceilings—plywood. ROOF—covered with wood sheathing and tar and gravel. INSULATION: Roof—rockwool. WINDOWS: Sash—metal, awning type.

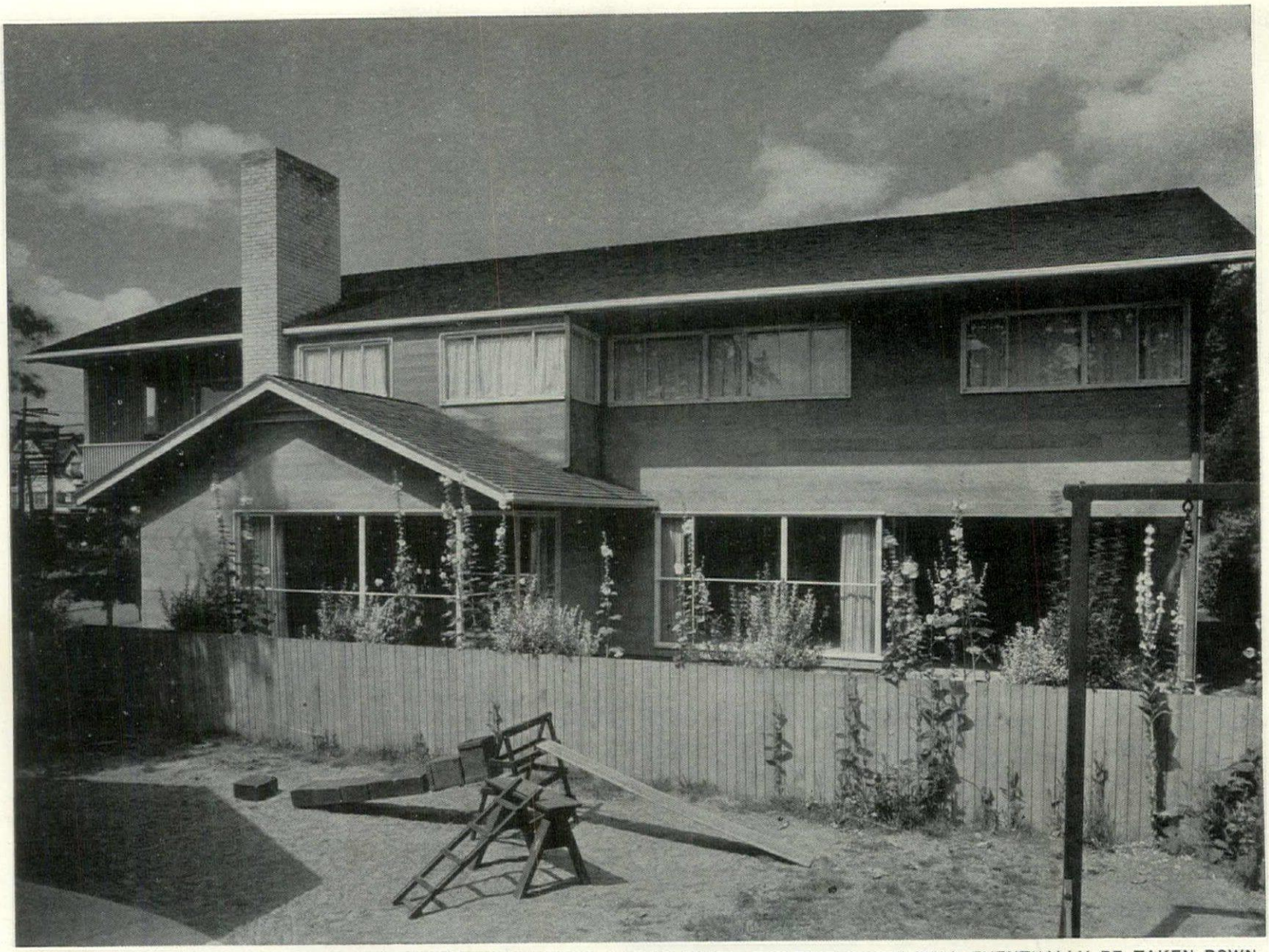


GUEST HOUSE

OUTDOOR PATIO IS COMPLETELY ENCIRCLED BY THREE WINGS OF HOUSE AND WOODEN WALL

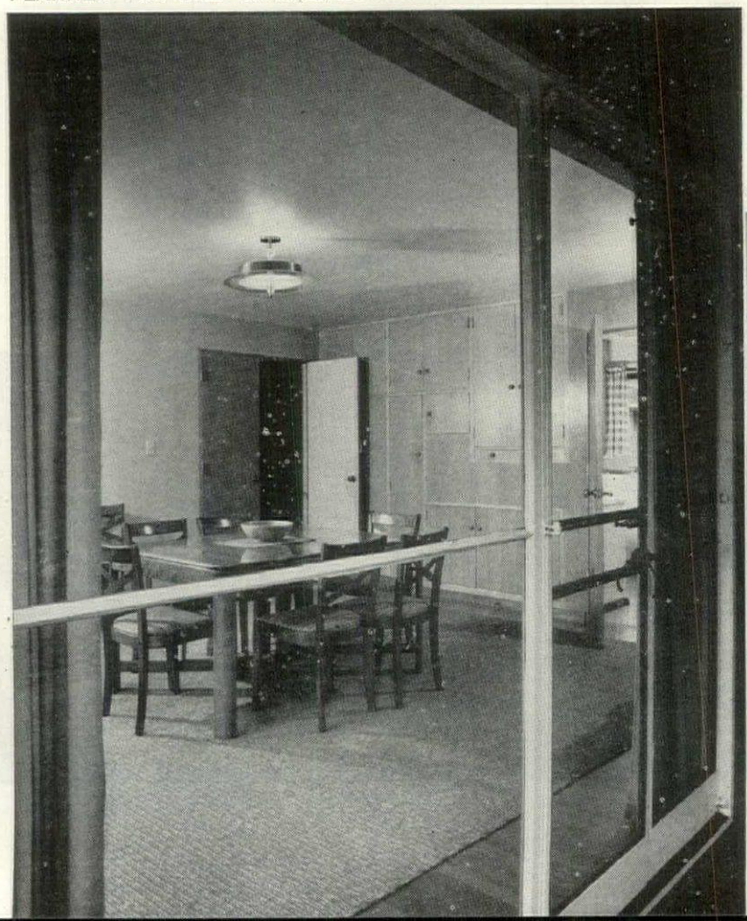




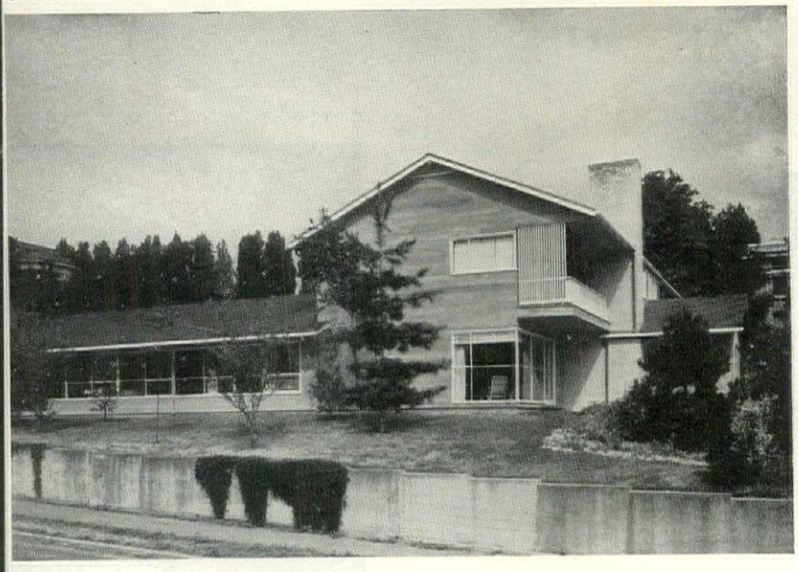


CROWDED ON PRESENT LOT, HOUSE HAS SOUTHERN WINDOWS FACING SMALL BUILDING WHICH WILL EVENTUALLY BE TAKEN DOWN

PLANNED FOR STEP SAVING, DINING ROOM HAS CUPBOARD WALL

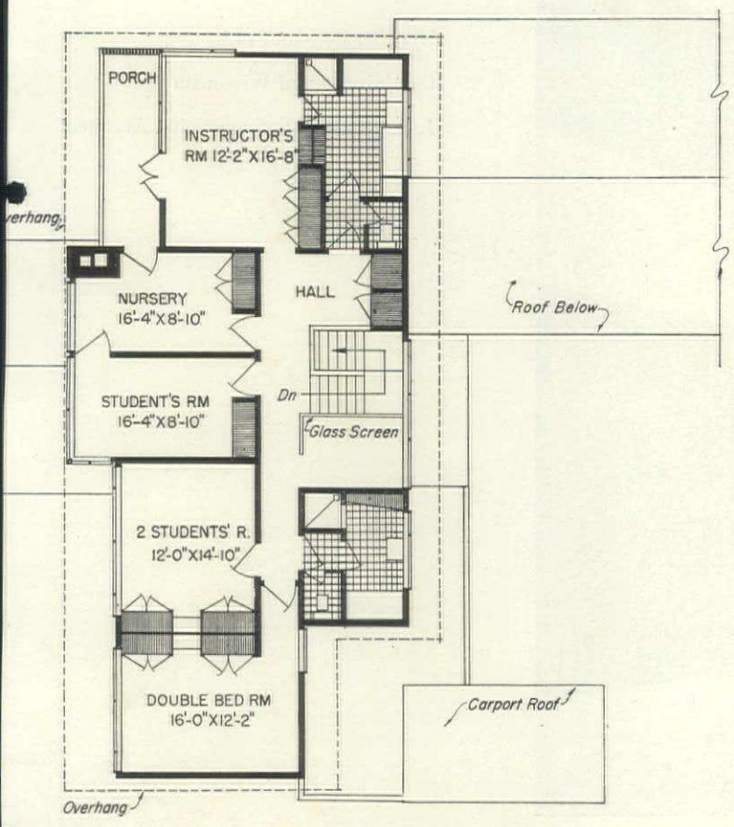


UPSTAIRS PORCH ON SOUTHWEST WAS PROVIDED AT REQUEST OF FACULTY

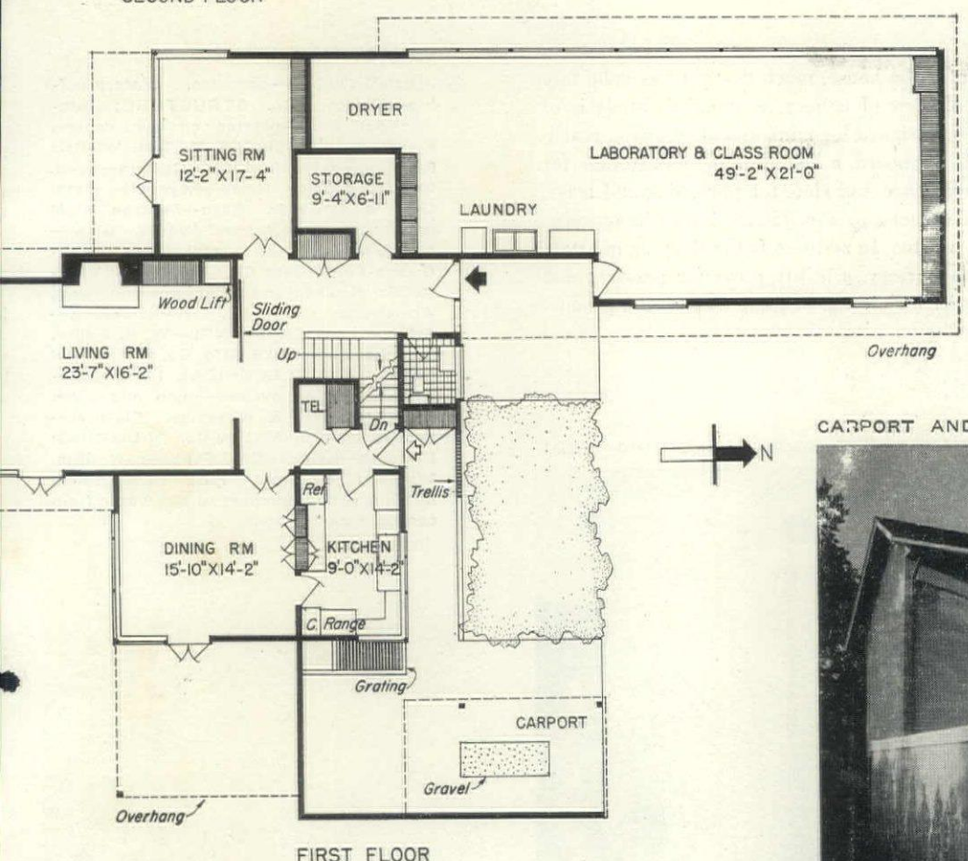


HOUSE IN SEATTLE University of Washington campus Home Management House provides student laboratory.

J. R. SPROULE, Supervising Architect



SECOND FLOOR



FIRST FLOOR

SCALE IN FEET
0 5 10 15

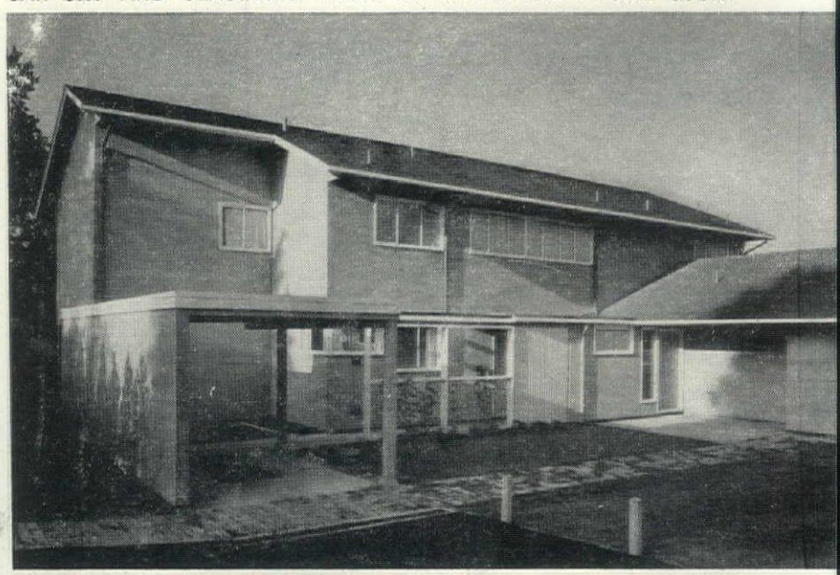
Girls in the Home Economics Department at the University of Washington learn how to run a home by practical experience. In this residence-laboratory they live and study, plan and serve meals, work out ideas for interior decoration, learn how to manage a home; they even borrow practice babies which live in the house as well.

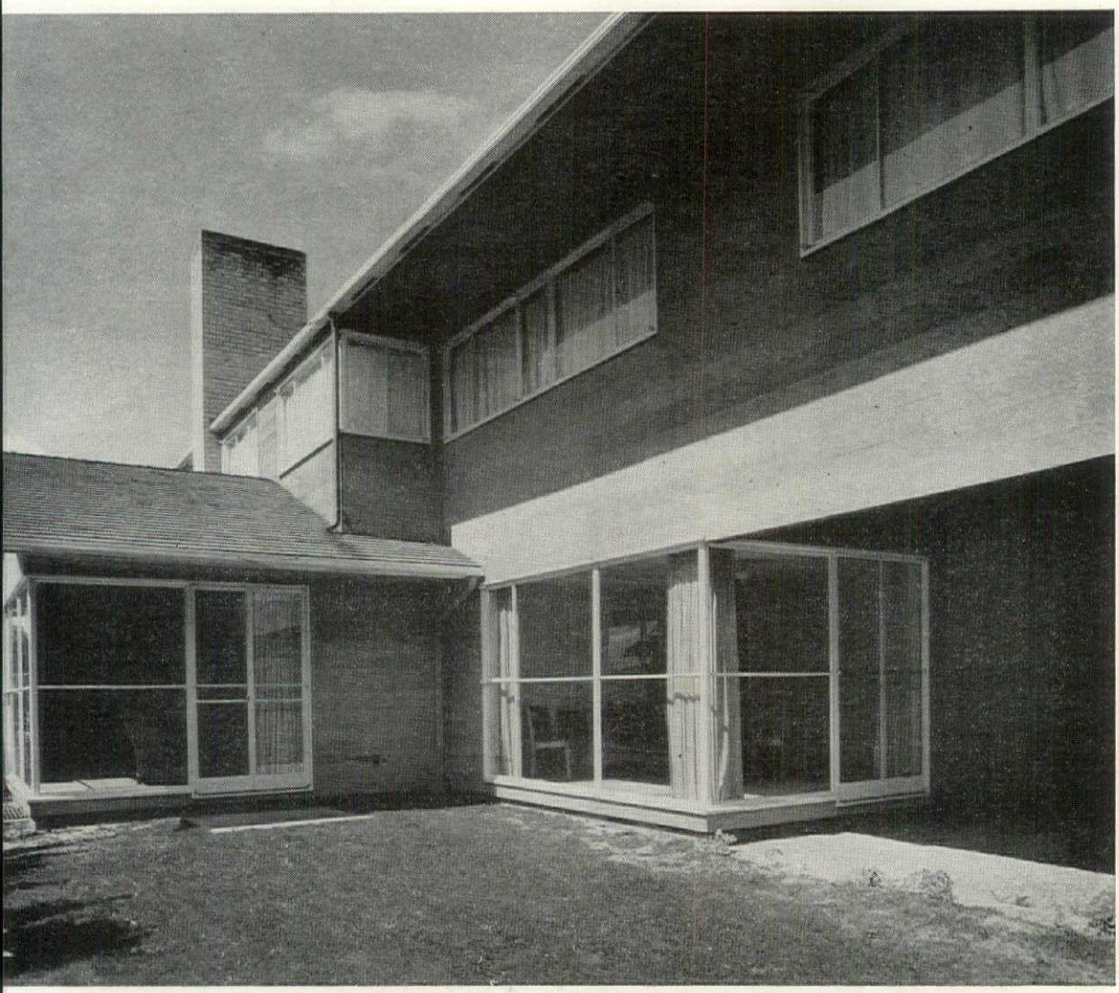
The building really has two portions, each separate in function. The two-story part is planned to house one instructor, five students and a baby, for one term (three months) at a time. The one-story structure running north is a classroom-laboratory, with two or three washing machines, laundry trays, ironing boards, etc. Here classes are held not only for the residents of the house but for other students as well. The simple, uncluttered lines of this extension, according to one of the department instructors, "led our less modern-minded friends to call the house a glorified chicken-ranch".

The building is somewhat cramped on its small lot, which lies just south of the main approach to the University and east of a street paralleling the campus' western boundary. Forty feet south of the living room stands a small house formerly used for a nursery, which will be torn down to allow for expansion. Otherwise the view on this side is quite open, and a winding road leading through campus trees is seen from the living- and dining room windows and the upstairs bedrooms and nursery.

A great many people collaborated on the planning and construction of the house. Faculty members of the Home Economics Department made preliminary suggestions on which the program was based. Designing and weaving of the fabrics for upholstery and curtains was done by the Department under the direction of Mary Elizabeth Sullivan. J. R. Sproule, the supervising architect, worked together with the University's Department of Building & Grounds under its Superintendent, Charles May, using WPA labor and University carpenters. Mr. May wanted to experiment with the installation of panel heating, with the idea of its possible future use in other University buildings. A system for the house was carefully worked out and installed by University engineers, and is supplied from the University's main steam plant through a small condenser.

CARPORT AND CLASSROOM WING ON NORTH SIDE FORM COURT





BOTH LIVING ROOM AND DINING ROOM AT RIGHT HAVE CORNER WINDOWS WITH CAMPUS VIEW

HOUSE IN SEATTLE

for University of Wisconsin

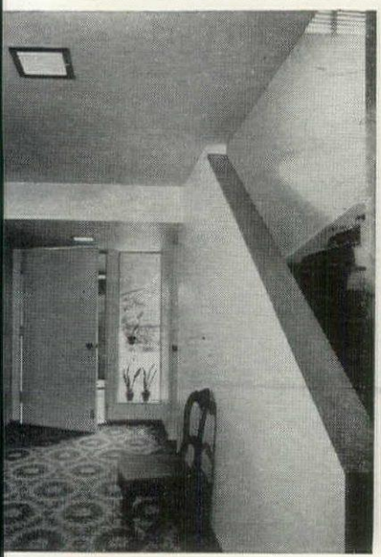
J. R. SPROULE, Supervising Architect

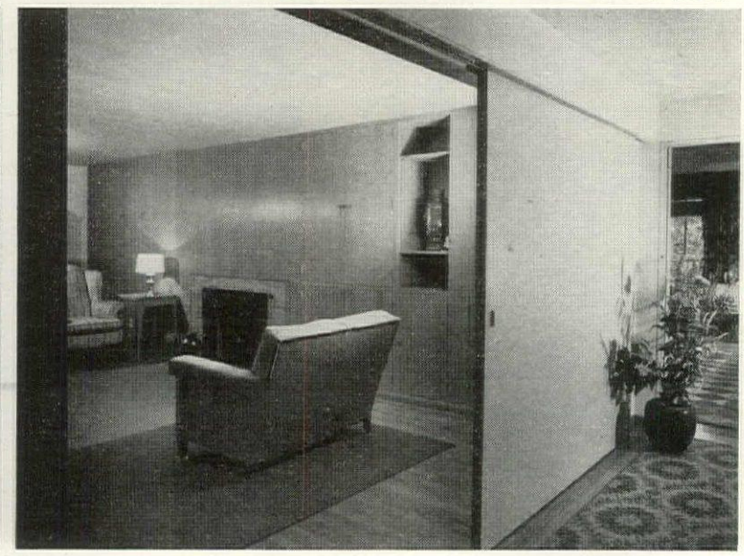
In the two-story living portion of the house, much thought has gone into the planning from the point of view of a home economist's analysis of function and care. The kitchen, designed for minimum of stooping, reaching and stacking, has a walk-in cupboard, a baking table with storage for spices and tools, sufficient shelf space and slots for pans, lids and trays. Faculty members are invited to dinner and served in the large dining room, entertained in the living room nearby. In addition to the sleeping quarters on the second floor, there is a nursery, a utility room for pressing and sewing, carefully planned closets for storing bedding and cleaning materials, and a porch.

CONSTRUCTION OUTLINE

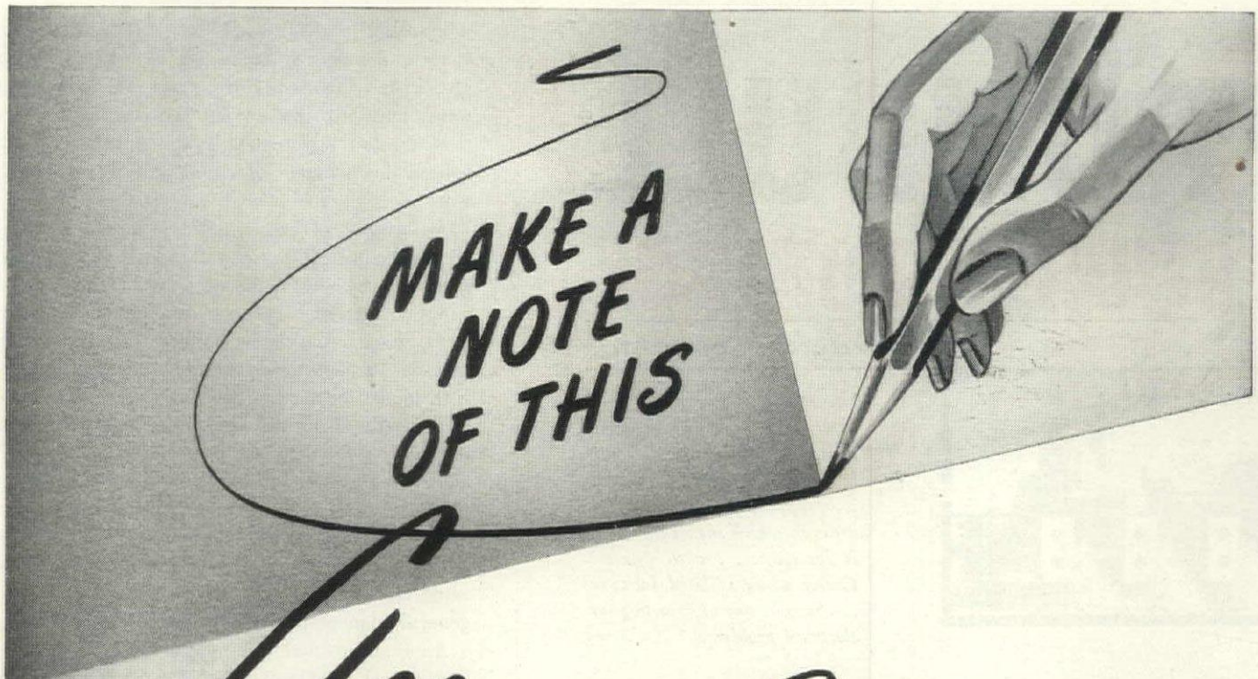
FOUNDATIONS—concrete. Waterproofing—Flintcote Co. STRUCTURE: Interior partitions—plaster or oak veneer. Floors—maple. SHEET METAL WORK: Flashing—galvanized iron. Gutters—wood. INSULATION: Roofs—Reynolds Metal Co. WINDOWS: Sash—Fentron steel casement, Fentrol Steel Works. Glass—double strength and crystal sheet, Libbey-Owens-Ford Glass Co. FLOOR COVERINGS: Kitchen and bathrooms—linoleum, Armstrong Cork Co. HARDWARE—Schlage Lock Co. PAINTS—W. P. Fuller, National Chemical & Mfg. Co. and Samuel Cabot, Inc. ELECTRICAL INSTALLATION: Wiring system—knob and tube. Switches—Hart & Hegeman. Fixtures—Seattle Lighting Fixture Co. PLUMBING: Fixtures—Kohler Co. Pipes—cast iron. Water pipes—steel. HEATING: Panel heating with condenser to hot water from central steam system.

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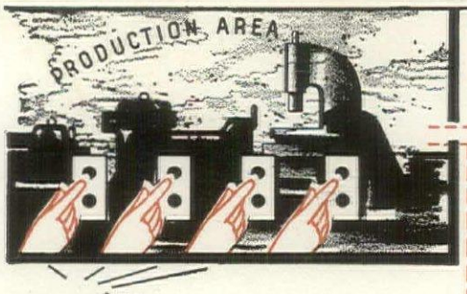
See our Catalog in Sweet's



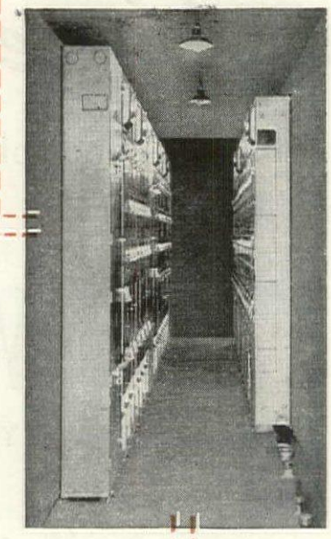
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Many industrial atmospheres are enemies of electrical control apparatus. The presence of dirt, dust, vapors, moisture, etc., may make it advisable to consider the location of only a minimum amount of control equipment in your actual working areas. Motors . . . YES; Push buttons for start and stop of such motors . . . YES; but actual Control, Disconnect, Short Circuit and Over-Current Protection . . . No. These functions can be located AWAY from actual working areas, where apparatus can be installed without sacrifice of productive square feet . . . and where maintenance and inspection are facilitated.

In other words, Trumbull will take your safety switches, circuit breakers, controllers and main bus bar structures . . . wrap them up in Steel . . . and build you a Control Center to be located *away* from *trouble.*

Diagram above shows Production Area containing only motors and push button stations. Removed from troublesome atmospheres, the Control Center is Guardian of the whole situation.

THE TRUMBULL ELECTRIC MFG. CO. • PLAINVILLE, CONN.
OTHER FACTORIES AT NORWOOD, O. — SEATTLE, SAN FRANCISCO, LOS ANGELES

Detailed plans provide each plant with plenty of green space and room for expansion, as well as adequate light and air. In most cases it will be possible for workers to walk to work, but both of the industrial centers are served by rapid transit as well as freight lines. A very rich and highly advanced development of social and recreational facilities for workers is planned in each industrial sub-area.

A network of electric rapid transit lines—underground within the central city and along the Vistula's palisades—will carry the heaviest passenger load. The city has been well supplied with high speed motor routes and local access highways. Feeder bus lines along these will connect with rapid transit. Transportation facilities have been closely integrated with industrial needs. The service industry area is especially well supplied with rail facilities. The heavy industry at Zeran is closely related to the projected Vistula-Bug-Narew canal. and served by heavy rail and truck lines.

One of the fundamental principles of the city plan is that no residential area shall be more than 30 minutes travel time from the center of the city. Commuting facilities, by bus and rapid transit, are based on this standard. The total area and general plan of the city has been correspondingly modified.

Another cardinal principle of the plan is the separation of foot and wheeled traffic. Within each basic residential unit (or "colony" as the Poles call it), plans have been based on reasonable walking distances for a child; within each neighborhood of 7,500 people, walking distances are scaled for an adult. Throughout the city the corridor street has been abolished, and even in the central areas, pedestrian traffic is isolated in the interiors of large blocks, and separated from wheeled traffic.

Housing standards to be sharply raised

By far the most interesting and difficult problems in Warsaw's city plan are those relating to housing. All new housing is closely integrated with the city plan. The basic unit is the residential colony. Standards of community sizes, of relationships between communities, and of standards of community facilities, guide all new developments (see table, p. 112). Housing will be undertaken only within the limits described in the plan.

"Today the main reason for living together seems to be the education of children," is a Polish statement which forms one of the basic concepts of the new Warsaw neighborhoods. The standards for dwelling area are based on the size of kindergartens and schools, and the cellular system of local government in its basic units is based on the assumption that the care of children is the principal common interest of the people.

The city plan defines the area for housing operations, and determines the size and population of these areas within elastic limits. Standards for housing and city planning permit the most complete development of residential communities within a pre-planned framework of community facilities. On the other hand, the development of a city wide network of community facilities is assured by the certainty that these facilities will serve specific housing communities. The standards developed are elastic, partly because standards cannot be absolutely rigid, and partly because detailed studies on which they are based still continue.

One notable feature of the standards arises from the necessarily meager housing that must prevail for some years because of the magnitude of the rebuilding job. The space standard has been fixed at 120 sq. ft. per person, and is ad-

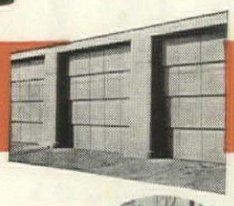
(Continued on page 134)

Take a door

★ as big as possible, as high and wide as you please,



or a series of small doors:



have them completely open in just 60 seconds, if you want speed; less than 10 seconds for small doors:



that is fully counterbalanced and operates electrically or manually, bringing all sections to top at same time,



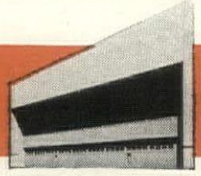
or stopping them at any point to save heat:



a door that leaves maximum ceiling, wall, floor and approach areas unobstructed so that overhead equipment can come right up to the opening;

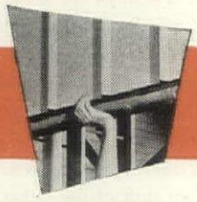


that can use any skin material to harmonize with your architectural design—with or without windows; with or without sliding pilot doors;

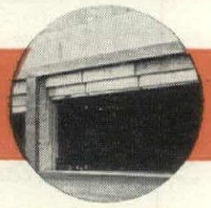


with or without sound and heat insulation, or a safety device for stopping the door

if it descends onto an object:



with the lowest section made to conform to ground slope,



and divided into independent doors, if desired, still leaving the opening unblocked.



put them all together..



The distinctive feature of the Robertson Door is that all the sections nest directly above the opening and in front of the main truss. Therefore, the open door is stored completely out of the way, subtracting nothing from working area. Furthermore, it is not blocked by drifts of snow or sand, or jammed by a sagging roof or frost-lifted ground. Robertson's Vertical Lift principle side-steps the jinxes which beset large doors. The engineering meets today's demand for speed and flexibility. And Robertson representatives will be very glad to work with you on harmonizing architectural details with the fundamental principles. For Door literature write:

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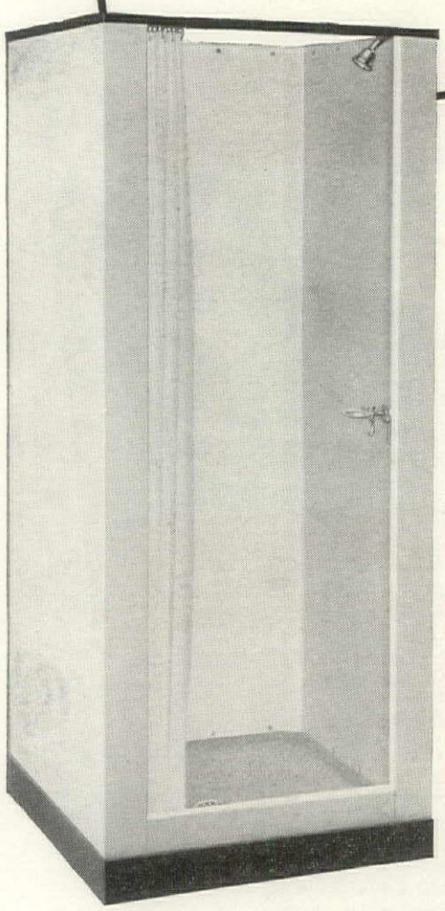
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WALLS—BONDERIZED, GALVANIZED STEEL. Finished inside and out with white baked-on-synthetic enamel.

RECEPTOR—Semi-flat standard type Stonetex; slip-proof, leak-proof, non-absorbent. Brass drain for 2" waste connection cast integral with receptor.

VALVES—Combination hot and cold compression valves with shower head and arm.

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mittedly a temporary one. Temporary building, however, is being avoided by giving priority to large families in the first small houses. These families will later be moved to larger units and replaced by smaller families as standards are raised. Any deficiency in dwelling standards is made up, however, by increased amounts of community facilities. In these facilities no temporary standards will be permitted. Instead they will be permanent and high—a bold effort to "counterbalance physical poverty with social wealth," as Lewis Mumford has expressed it.

All work centralized in Reconstruction Office

The vast work of reconstruction inevitably requires a large staff and a complicated organization. About 1,400 persons are employed today in the Warsaw Reconstruction Office, about evenly divided between professional personnel and the drafting, clerical and stenographic force. Two hundred architects are at work in the Office. Under the disorganized economic conditions that still prevail, the time of part of this staff is spent in activities to sustain the group as a whole—such as going into the country to purchase provisions, doing necessary repairs and similar chores. Large numbers of students are employed for drafting and clerical tasks, and may learn while working to assume more responsible tasks.

The present leader of Poland's parliament was the chairman of the board of the pre-war Warsaw Social Building Society; the present mayor of Warsaw was the general manager of the Building Society; and the architects of the Society now play a dominant role in the planning of the new city. Perhaps the outstanding feature of the Warsaw plan is the superior grasp of the dynamics of planning resulting from the experiences before the war with cooperative and public housing. These experiences have had other important results in the life of the city: many of the principal changes in local government are those of "functional social democracy" as described by Warsaw's mayor in his book by that title.

The staff of the Office is divided into sections. To illustrate the functioning of this organization, the planning and execution of one of the large housing projects would be developed initially at the planning or program level, and carried out by the executive level. The necessary contracts and executive orders would be prepared, and the work would be supervised here. The administrative staff is concerned mainly with financing, public education and the administration of the Office.

The city planners and architects work as teams, usually of three persons, one of whom is the chief. The object of fruitful collaboration has been realized in all stages of the planning work. Teams have worked on research and standards for industry, housing, transportation and other aspects of the plan. Teams have worked on the design of the city as a whole, at a scale of 1:20,000, and on the design of individual parts of the city. In the development of working plans, teams have again been used, each assigned to its particular "landscape" or section of the city, and working to a coordinated plan.

The work of public education is taken very seriously, since it is obvious that without the understanding and support of the majority of the citizens no city plan could long be effective. Before an area of the city is to be planned, the planning code provides that this fact must be announced publicly. For a period of weeks residents in the area to be planned or those affected by the plan may submit planning proposals. At the conclusion of this period the professional planners go to work. When their plans have been completed they must be publicly exhibited and explained, not only to the local government and

(Continued on page 136)

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Change is as inevitable in hospitals as in the science of medicine. Snead Mobilwalls enable a hospital to keep pace with the ever-changing needs of the times, quickly, easily and inexpensively.

Snead Mobilwalls are the outstanding movable steel wall for modern hospital interiors. They combine the privacy, permanent appearance, and soundproofness of fixed masonry walls with instant mobility, flexibility, low upkeep, and complete reusability.

The Memorial Hospital, New York City, provides a significant example of the value of flexible interiors. This modern hospital for the treatment of cancer is equipped throughout with Snead Mobilwalls. The medical and business staffs operate in complete privacy and quiet with easily rearranged flush steel Mobilwalls. This extreme flexibility has already served the hospital many times when rearrangements had to be effected overnight. Small clinic operating rooms, dressing rooms, and examination rooms are of similar construction. Semi-privacy is obtained for ward patients with Snead Mobilscreens. The entire installation was made with 3-inch thick flush Type RF Mobilwalls, finished in a light cream color enamel.

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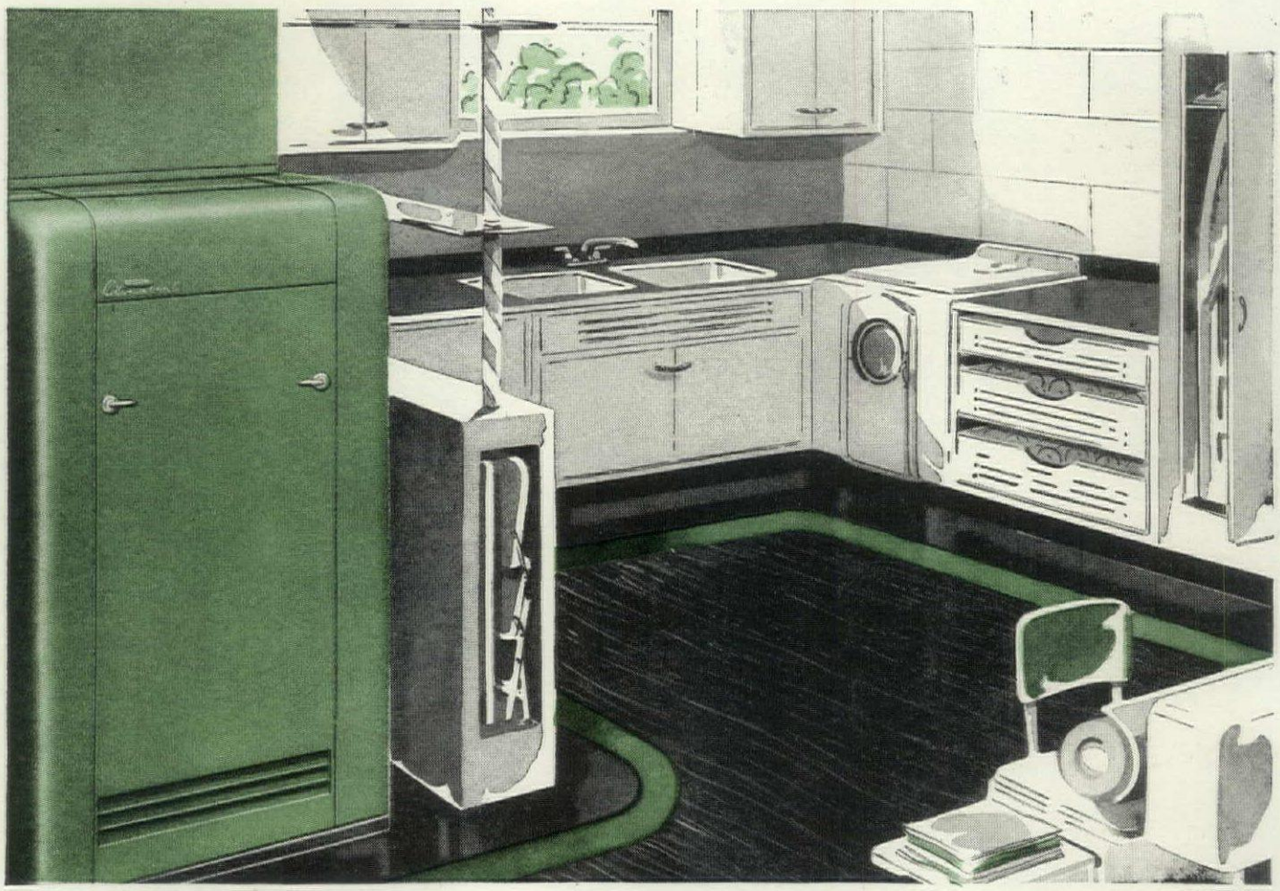
interested organizations, but to the people at large. An additional period is stipulated by the planning code in which objections and alternative proposals can be made. These must be answered specifically or incorporated into the final plan, which is then presented to the people for their final approval. From this point on the plan has the force of law.

The great architectural and historical heritage of Warsaw has largely disappeared, partly because of destruction during the war, but mainly because of the systematic Nazi program of destroying the historical and cultural symbols, and the cultural institutions of the city. The preservation and restoration of these monuments forms an important part of the reconstruction program. The Warsaw Reconstruction Office contains an historical buildings service, whose powers over these matters, like that of the office in other spheres, permit it to overrule any governmental or municipal authority. The Reconstruction Office does not propose extensive rebuilding of monuments wholly destroyed during the war, but it will endeavor to conserve those fragments which remain, to restore those which have been damaged, and to enhance their value to the citizens of Poland. The old walled city will become the national center of musical, art and cultural activities.

Soviets to pay half reconstruction costs

The reconstruction of Warsaw, according to the plans made by the Reconstruction Office, is financed in several ways. From the national budget for reconstruction, the city has its share; during the first year following the war this amounted to 60 per cent of the total. The amount may seem abnormally excessive but is justified because of the far heavier damage suffered by Warsaw, the urgent need of the government to get the capital functioning again, and the importance of the city to the economic and transportation system of Poland. The municipal budget is partly devoted to financing reconstruction projects. The city's income from leased lands, and from the various municipal enterprises and public services (such as transportation, water, abattoirs, gas and electricity), from income taxes on industry, and from special excise taxes for reconstruction purposes, makes its contribution. Finally there have been many voluntary gifts to the city from other parts of Poland; and the Soviet Republics of White Russia and the Ukraine have promised to pay half the cost of the reconstruction of Warsaw. Many of the important semi-public buildings are to be financed by existing national organizations of trade unions, sports and cultural groups and similar bodies.

The city of Warsaw has rolled up its sleeves and gone to work to make the city plan and carry it out. The degree of participation of the people is a remarkable achievement, especially at a time when there are the strongest individual incentives to save one's own skin. In part this is the result of six hard years of working together against the common enemy, but it can only be fully explained by the confidence and enthusiasm of the citizens of Warsaw, their recognition of the importance of the plan, their confidence in its execution. Here, as in many other cities, the first test came when it was necessary to clear the rubble that covered the city. A remarkable nation-wide competition was held to discover the best ways of using the rubble. The winning solution proposed a system of classifying the rubble, crushing it and using it as aggregate for new construction. This prize winning suggestion served to dramatize the importance of rubble removal and is one reason why in Warsaw today you can see long queues of men and women, handing down rubble from the demolished buildings to horse-drawn carts, singing as they work, confident that their labor is building a new Warsaw.



B-29

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Behind every front-paged adventure of American industry is the man behind the door marked "President." While the balls-of-fire capture the public imagination and become the symbols of daring industrial progress, anonymous men in the Board Room quietly advance the business frontier.

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In his highly capable administration of the Borg-Warner Corp., FORTUNE has uncovered a story of rut-resisting enterprise; of improvement upon improvement in automotive products, aircraft parts, farm implements, and a long list of etcetera.

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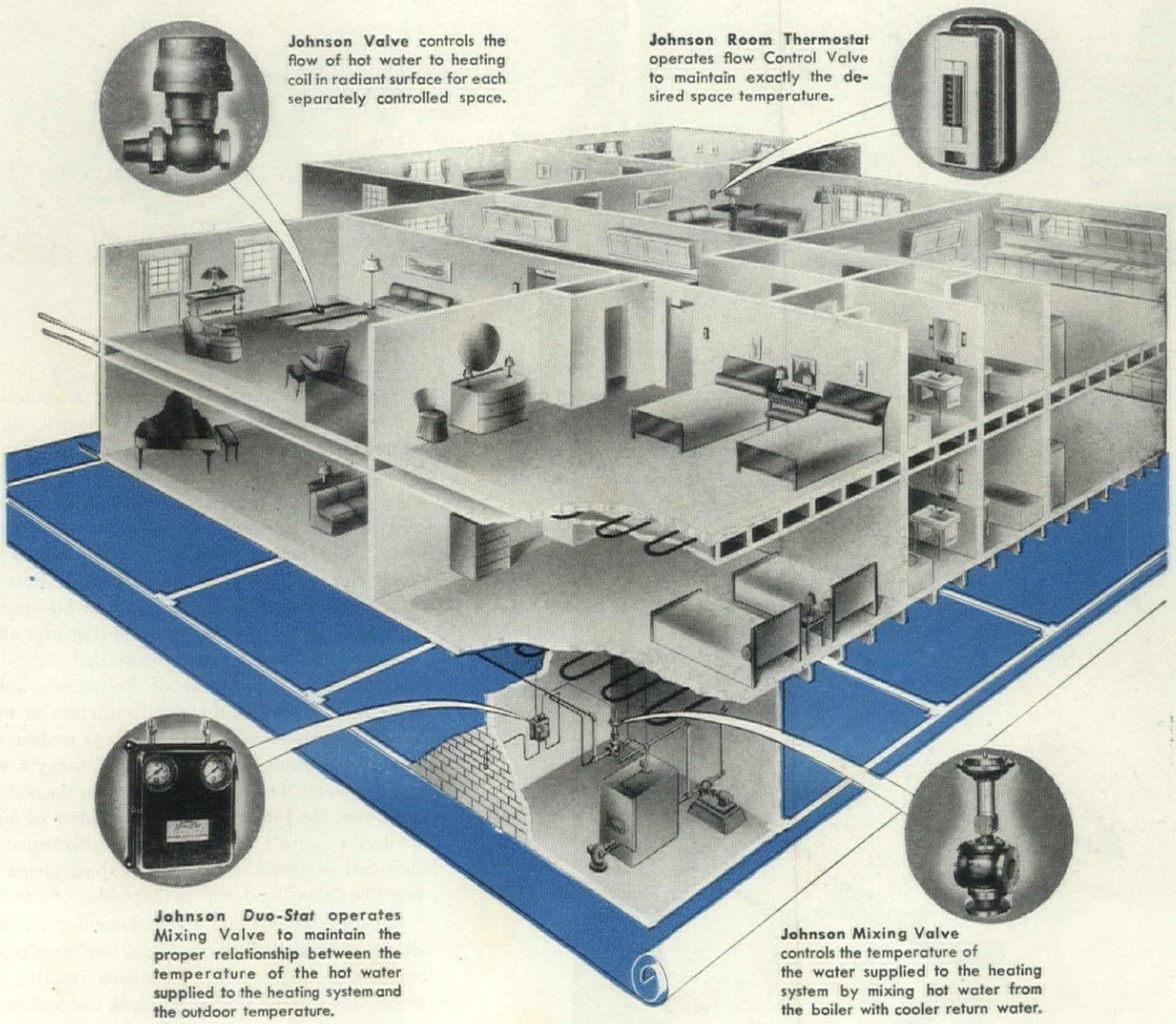
These anonymous Men of Adventure are doing more than just a good job in their day-by-day progress; together, their cumulative triumphs are vital to the success of the American Adventure. And FORTUNE alone—its Special Reporter—presents for its readers the story of these men and women in and *behind* the headlines; and for its advertisers FORTUNE gives the full support of the most distinguished editorial and advertising pages in U.S. business history.

*See *"Borg-Warner," p. 129,* FORTUNE, *June, 1946*

Fortune

JUNE • 1946

HOW TO CONTROL *Radiant Heating*

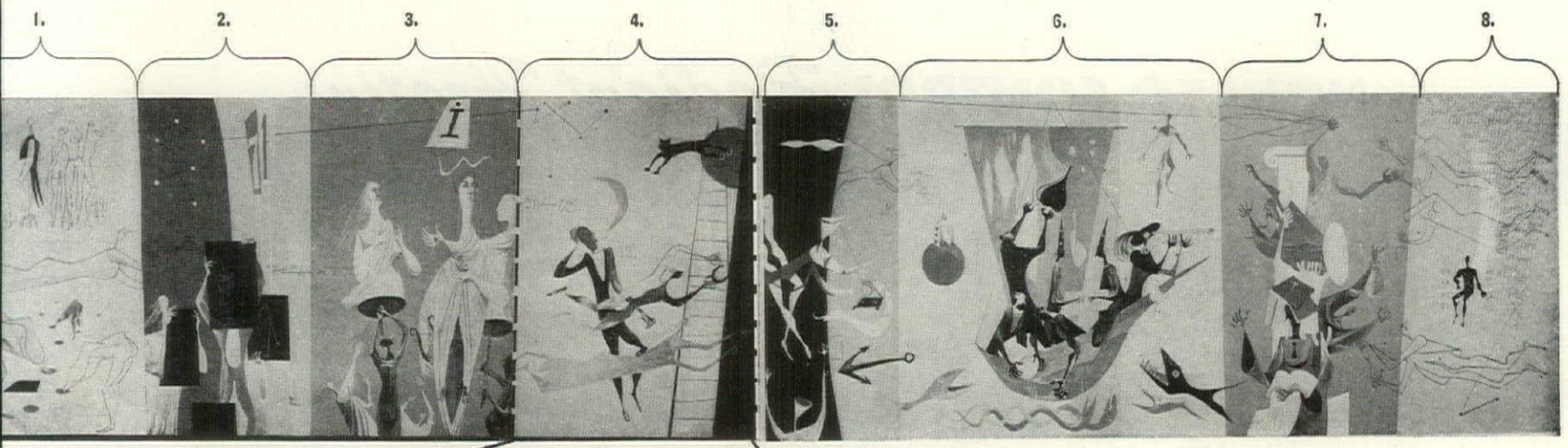


The illustration shows a typical Johnson Automatic Temperature Control System for radiant heating, as applied to an apartment building. This, or other similar Johnson Radiant Heating Controls are available for small and large residences, schools, commercial buildings, hotels, hospitals, industrial plants and almost every conceivable type of building.

The essential of Johnson *Radiant Heating* Control is the *Duo-Stat,* which controls the temperature of the water supplied to the radiant heating surfaces according to the outdoor temperature. This is fundamentally correct. It insures that a change in heat input to the radiant surfaces will occur *immediately* upon a change in weather conditions. With other methods of control, a change in space temperature must take place *before* the required change can be made in the temperature of the water supplied to the radiant heating surfaces.

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1, Ostrich isolationists below headless Park Ave. belles. 2, X-rayed humans. 3, Female and male egos. 4, Superstition. 5, Hollow man at typewriter. 6, Wreck of the ship HOPE III. 7, Sterile education and financial greed. 8, Muse of Time.

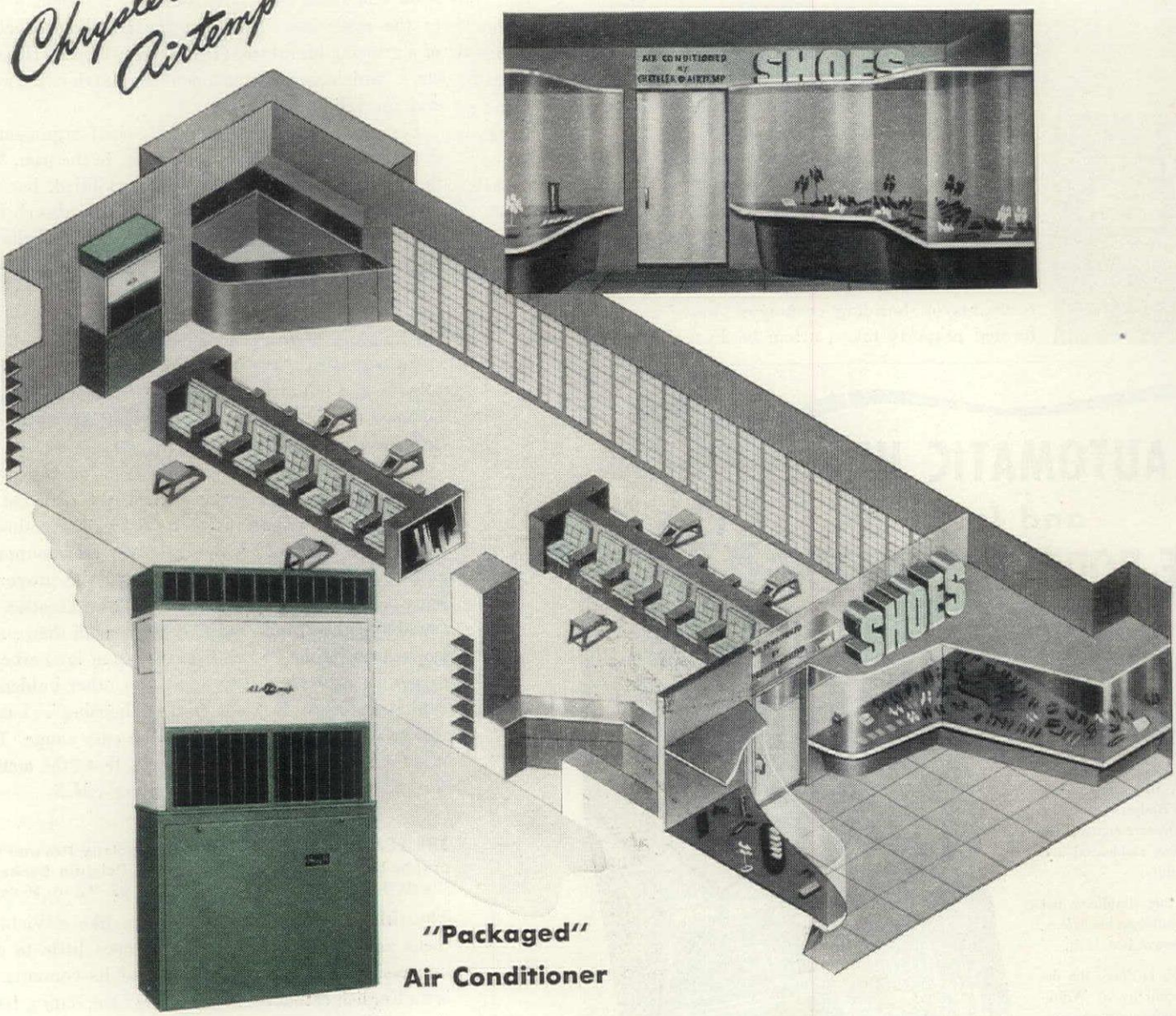
Anton Refregier's return engagement as mural painter and interior decorator for New York's famed night spot, Cafe Society, is no coincidence. Another artist who undertook to decorate the club between its Refregier eras netted the management nothing but a sharp drop in attendance and a cantankerously disposed clientele. While executed on a slim budget, this newest interior demonstrates an integration of architecture, color and decoration that is Refregier's fondest theory, and undoubtedly the secret of his success. For once the mural painter was called in on the over-all design at its inception. The result speaks for itself.

Social satire, the theme of Refregier's abstract murals, never fails to delight the public whether or not their entire content is understood. There is enough realism in the painting to provoke simple curiosity and pad many a wilting conversation, enough humor and whimsy in the subject matter to make even the non-arty observer confident of his own instinct. While the murals are definitely sophisticated in character, their deft presentation abolishes any suspicion that the artist might be "painting down" to his public.

Retaining an existing faceted dome in the ceiling, Refregier set about his design by deciding, not what color to paint it, but how to treat it. This approach resulted in four facets alternately colored white, red, black and yellow. Black on the wall facing the stage is carried from the top of the dome to the floor. It unobtrusively divides the main room from the vermilion, black and white bar, points up the small scale brilliance of the latter. The white side of the dome slopes down to the top of the stage draped in black cloth. The softly bunched fabric makes an excellent background for the orchestra, adapts itself to subtle lighting effects, contributes quite an impression of perspective and provides relaxation from the vitality of the murals on the side walls. Here, panels of red and yellow are drawn down from the ceiling colors to form background sections in the paintings proper, giving them an intimate relation to the over-all decorative scheme. A large mobile, executed by sculptor Paul Petroff working hand in hand with Refregier, hangs in the center of the ceiling. Its shadow, boldly cast on the curved side of the dome ties the mobile directly to the murals through related shape. The shadow, which disappears as the lights dim to announce the floor show, reappears at the end, establishing a visual connection between the entertainment and the surroundings.

In the days when night clubs are apt to look either like Victorian jewel chests or chromium shoe boxes, Anton Refregier's sprightly, integrated interior represents a real contribution to its field of design. *M.S.* *(Continued on page 142)*

Chrysler Airtemp



"Packaged"
Air Conditioner

"Portrait" of a Star Shoe Salesman

"He's" a diligent worker, this super salesman . . . "he" brings in more customers . . . gives them comfortable satisfaction every minute they're in the store . . . encourages them to stay longer and buy more . . . leaves them with pleasant memories and a desire to return. Architects know him well—in fact, "he" frequently gets his star selling jobs through architects' recommendations. They know "him" as the Chrysler Airtemp "Packaged" Air Conditioner.

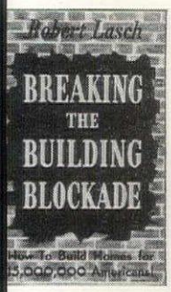
This simplified form of air conditioning, pioneered by Chrysler Airtemp, is ideal for stores of all types. "Packaged" Air Conditioners, with the famous sealed compressor, are engineered for long, dependable life. They are compact and easily moved, an advantage when remodeling or changing locations. Operating and upkeep costs are exceptionally low.

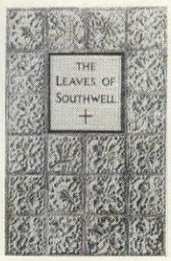
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BREAKING THE BUILDING BLOCKADE by Robert Lasch, The University of Chicago Press, 316 pp., Index 7½ in. x 5 in. $3.

Robert Lasch, editorialist for the *Chicago Sun*, has written a deft background-and-forecast piece to go with the current housing story. To those with a professional interest in the subject, it will contribute few fresh insights. Such exact studies as the Twentieth Century Fund's *Modern Housing*, have already established expert understanding of the causes and cures of crisis in housing. Yet newspaperman Lasch has done a job to which the specialist is seldom emboldened. With firm hand he has stacked together the conclusions of many tillers of narrow fields. Lasch lines up the arguments for capital cost reduction, action against legal and extra-legal restraints on building economies, lower mortgage rates, reformed property taxes, urban land assembly and subdivision control, yield insurance, government loans and subsidies. His book is a Baedeker of the building problem, a trim briefing of the essentials. *Breaking the Building Blockade* is part of a growing literature, (Dorothy Rosenman, Henry Churchill, etc.), which sets out to open the barriers between popular and specialized effort.

Few will disagree with Lasch's chief arguments—that construction's cyclic slumps have come, in the past, "not because the real need for housing has been filled, but because the capacity of the upper-income groups to absorb housing at a given price level has been exhausted". He believes, furthermore, that if any long-range program of national rehousing is to be met, we must provide systematically for meeting not one, but *all* income requirements. In order to achieve this the building industry must reduce costs, simultaneously develop extraordinary forms of enterprise involving public subsidy and initiative—in short, "broaden the range of family incomes which can afford good housing, supplement those incomes which cannot".

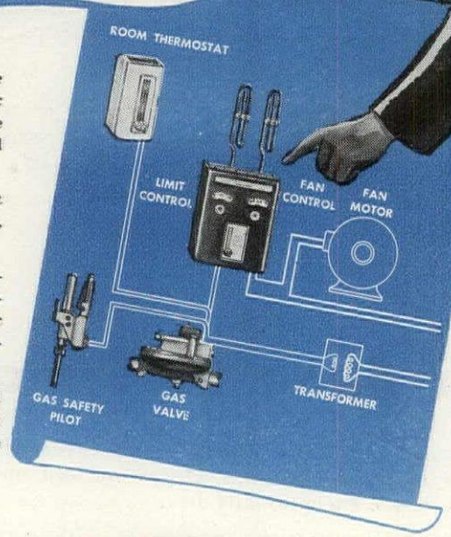
It may be felt, however, that Lasch has failed to work out a scale of immediacy and practicality for his list of reforms. It is certainly important to know which methods lie right outside the door, and which are over the mountain. For example: the suggestion of "displacing the property tax as a basic source of local revenue", or "the creation of a transferrable equity", are obviously further off than such accepted procedures as the "amendment of state laws when necessary to permit insurance companies and other holders of trusted capital to invest in yield insured housing". Lasch's breezy review implies that both are within easy range. But perhaps it is even true, as he hopefully says, that "the methods can be worked out if we accept the principles". *M.B.*

THE LEAVES OF SOUTHWELL by Nikolaus Pevsner with photographs by F. L. Attenborough. King Penguin Books, New York. Illustrated. 72 pp., 32 plates. 4¾ in. by 7¼ in. 50 cents.

The title of this little book sounds like a Victorian parlor piece and the design of its cover does little to correct that impression. Neither is any index of its contents. Southwell is an English cathedral near Nottingham, dating from Norman times. The leaves are the carved stone ones in the thirteenth century Chapter House, "fresh and resilient, lustily spreading all over the capitals of the 45 columns which separate the seats, all over the tympana, crockets and finials of the gables above the seats, all over the vaulting shafts and bosses of the roof, all over the capitals and voussoirs." As is clear from Attenborough's excellent photographs of these little-known fragments of English Gothic, the leaves of Southwell are architectural sculpture of astonishing sophistication and vitality. And Pevsner's analysis of this anonymous sculpture is extremely rewarding. *(Continued on page 144)*

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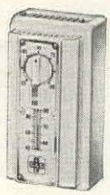
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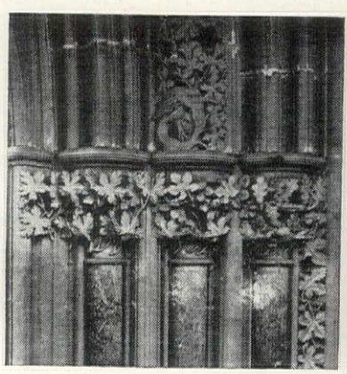


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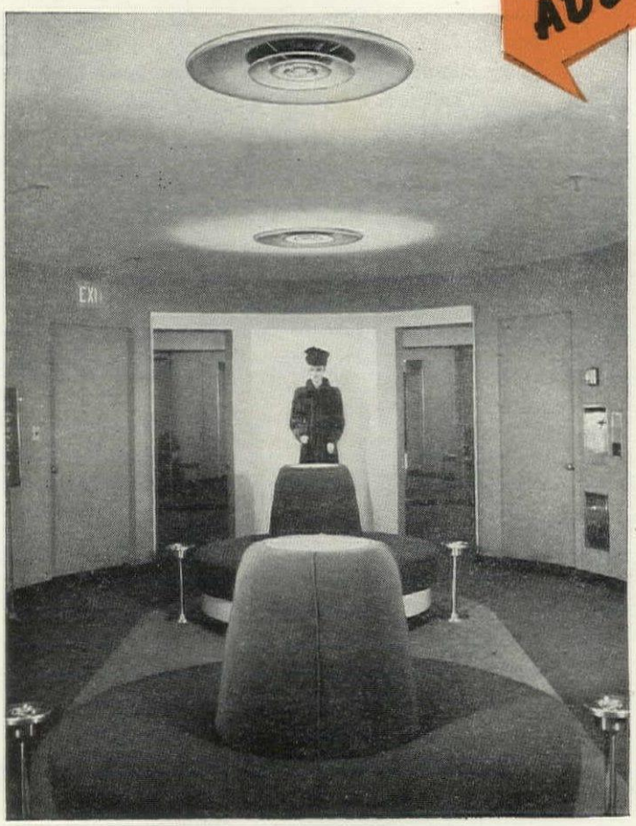




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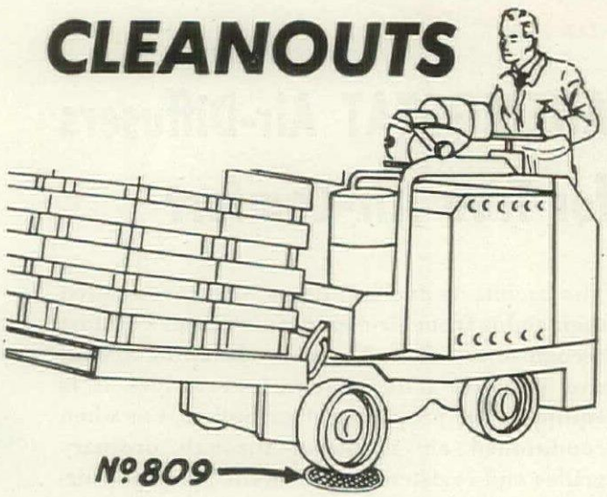
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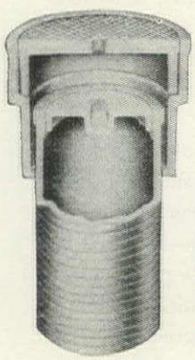
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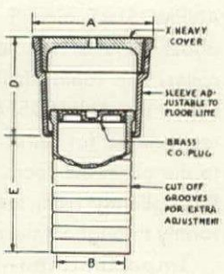
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The master-craftsman of Southwell was "an artist who knew very clearly how far he could go in veiling functional lines without confusing them." He managed in his sculptures to achieve a "balance of structure and decoration—a precarious, adventurous, proudly and self-consciously sustained balance" which distinguishes his work from that of his contemporaries across the Channel. He was obviously a close student of nature—reaching "a degree of truth to life which never between the first and the thirteenth century had been attempted in the West"—and earnest British botanists have identified some fifteen genera in his work. But here too he achieved a balance—this time between Nature and her representation. Nowhere does one find "that plodding, painful, pedantic pettiness of detail which spoils so much academic flower drawing" of later times. He did not try to make stone masquerade as vegetable matter, yet he nowhere forced his leaves into decorative symmetry. He respected *both* leaf and stone. "This is how he achieved unity, while at the same time preserving variety; and this is how he could avoid tediousness, while confining himself to a far smaller number of botanical genera than the casual observer would realize."

But if he drew the plants of England with veracity, the sculptor did not draw them to scale—his hawthorne leaves are the same size as the maple or vine. This disregard of scale Pevsner finds a basic attribute of the Gothic mind. "The thirteenth century had no ability or wish yet to place individual objects into relation with each other or nature as a whole. It is the same in the figure sculpture of French cathedrals. Beyond a relation of two figures—say, the Virgin and Elizabeth in the Visitation, or Abraham and Melchizedek

(Continued on page 146)

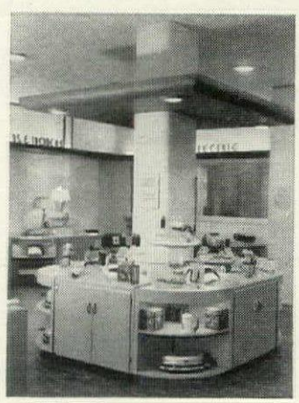
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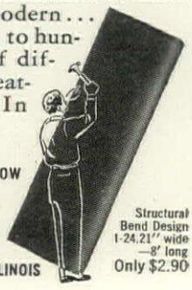
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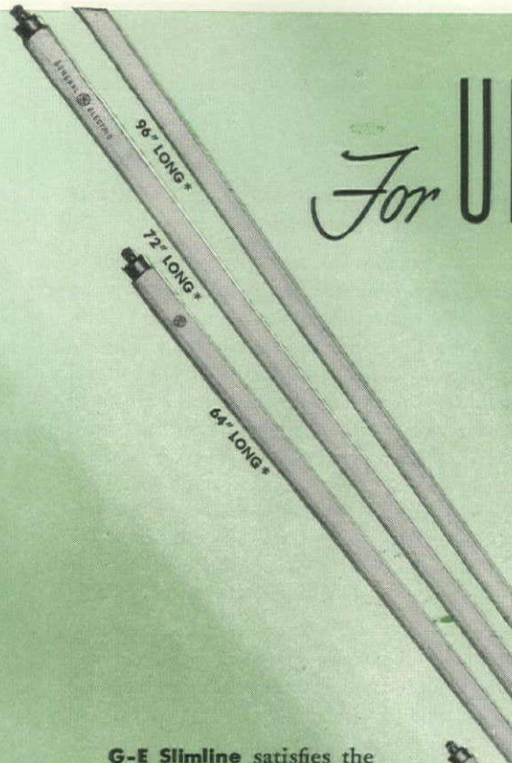
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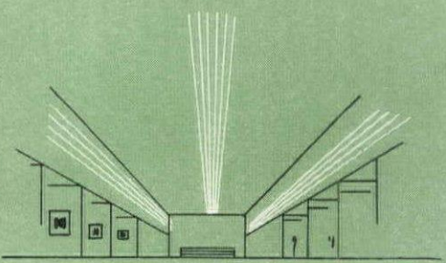
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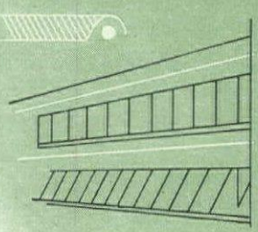
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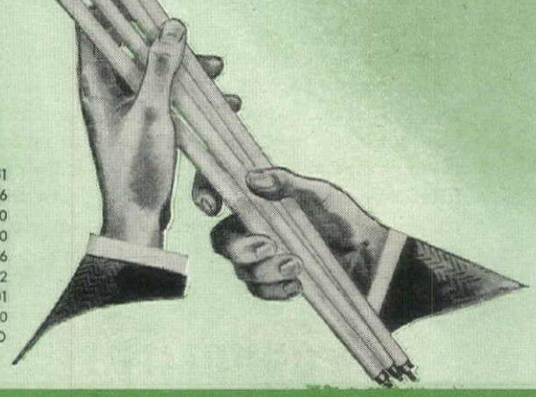


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—no sculptor was able to go." Thirteenth century sculpture was, conceptually, innocent of perspective.

From analysis of the Southwell leaves, Pevsner proceeds to a discussion of the sculptor himself. There are, naturally, no records to prove who he was. (Indeed, there is nothing to indicate that several and not one man did the carving.) But the author's concern is more to place the artist in his cultural matrix, to relate him to known contemporaries, as a means of better understanding his work and how it got that way. Pevsner does this, briefly but convincingly. There was a surprisingly lively commerce in the medieval world, a commerce in which English scholars and craftsmen were very actively involved. As a result of this, English life was already beginning to take on those special characteristics which led directly to the robust and confident humanism of the age of Shakespeare.

The master of Southwell was not the only Englishman who was breaking away from the authoritarianism of the medieval church. Instead of nightmarish gargoyles and tormented masks, there were nightingales and roses. Just so, at Southwell, there were only two dragons—"small and innocuous-looking creatures"—amidst all the foliage. St. Anselm, the Archbishop of Canterbury might warn against smelling red roses ("the delight of the senses is rarely good, mostly bad," he wrote); but Albertus and the sculptor of Southwell obviously thought otherwise. And it was men such as they who prepared the ground for the Renaissance.

Although this little book probes a very small and obscure section of Western art history, it succeeds in illuminating a larger area than many a more pretentious tome. *J. M. F.*



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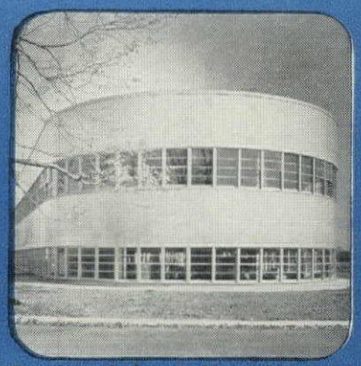
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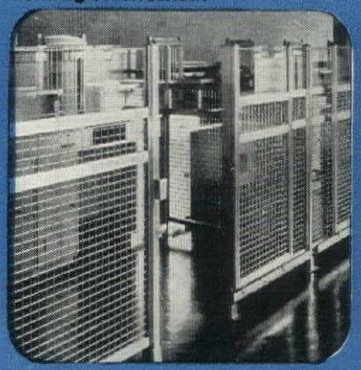
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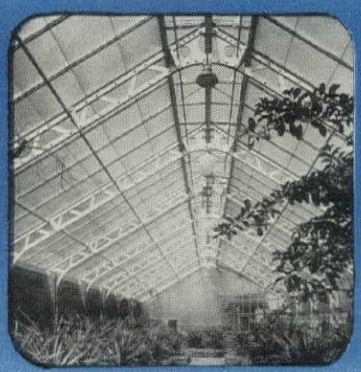
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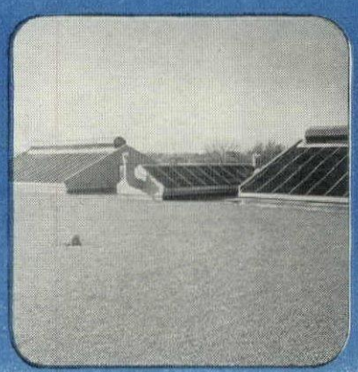
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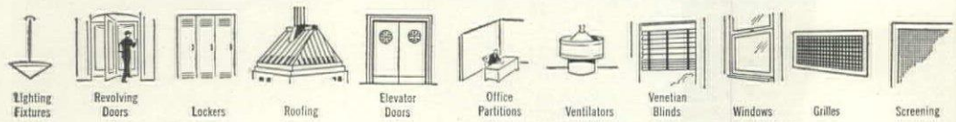


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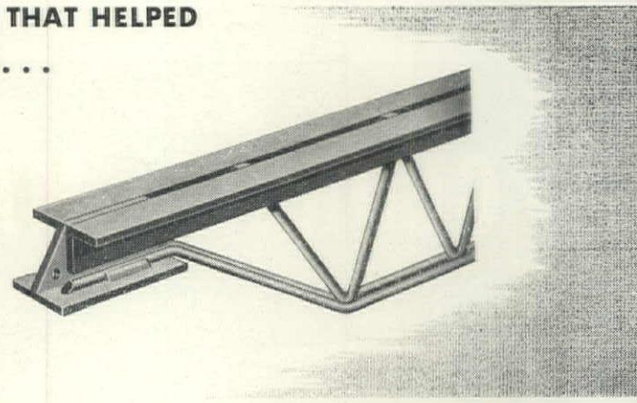
Things were humming on the housing project of Architect Allen. Building schedules were being met and then it happened—certain materials which were available when the houses were designed suddenly could not be had.

Architect Allen was all agog. A less resourceful man might have been stopped. But Architect Allen knew what to do. He called on Ceco and with the builder worked out new designs which could employ available Ceco products. So the job went ahead on schedule within the original cost. Ceco had helped Architect Allen to come through.

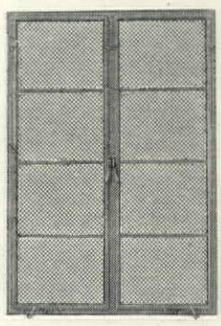


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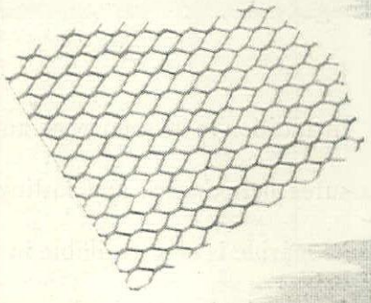
HERE ARE THE CECO PRODUCTS THAT HELPED SOLVE MR. ALLEN'S PROBLEMS . . .



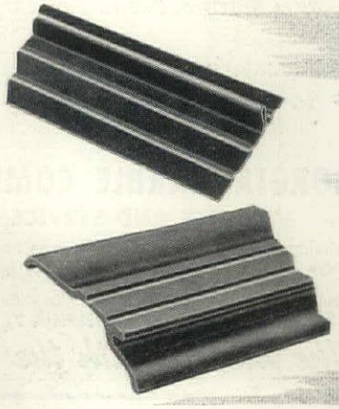
Open web steel joists
for floors



Metal casements and screens
for window openings



Metal lath and accessories
for ceilings and partitions



Metal weatherstrips
for doors

CECO ENGINEERING PLUS CONSTRUCTION KNOW-HOW . . . MAY HELP YOU WITH YOUR PROBLEMS

Ceco Engineers do more than design fine construction products. Besides their wealth of technical engineering knowledge there is constantly available to you construction know-how gained by many years of experience on the job, in the field. In 23 offices strategically located from coast to coast, Ceco stands ready to help solve your problem without delay and with technical skill.

In these days of shortages, Ceco often can show you how to adapt available products so the job can go ahead. In the matter of hard-to-get materials, Ceco is doing all it can to rush production for you.

CECO STEEL PRODUCTS CORPORATION

GENERAL OFFICES — 5701 W. 26th Street, Chicago 50, Illinois

Offices, warehouses and fabricating plants in principal cities.



makes the big difference

GEORGIA MARBLE



Store Fronts Of **TOMORROW**

. . . Are Available **TODAY!**

Hankin's Store, Atlanta, Ga., Arch.: Ben Golden



In addition to its smartness, and decorative value, Georgia Marble assures permanence and lasting economy. This sparkling, crystal white marble is now available in veneers as thin as 7/8". It is not necessary to paint it on the back.

For modernizing shops and stores as well as for new construction specify Georgia Marble. Production facilities are being substantially increased and material is readily available . . . TODAY.

THE GEORGIA MARBLE COMPANY, Tate, Georgia

SALES AND SERVICE OFFICES:

Bona Allen Building **ATLANTA 3, GA.**

419 – 4th Avenue **NEW YORK 16, N. Y.**

300 No. Beacon Street **BRIGHTON 35, MASS.**

513 Liberty Trust Building **PHILADELPHIA 7, PA.**

Bond Building **WASHINGTON 5, D. C.**

1570 Hanna Building **CLEVELAND 15, OHIO**

"The Marble with the **SPARKLING CRYSTAL"**

Winners of the American Stove Company's Magic Chef "Gas Range of Tomorrow" competition sponsored by the FORUM were announced recently. First, third and sixth awards went to the Product Design Associates, New York (Marie Di Bari, designer working with Sidney Katz, Taina Waisman, Joseph Blumenkranz, Victor Elmaleh, and Read Weber); second place to Roger Spross, New York; fourth place was shared by Bert Bassuk, Brooklyn, and Martin Glaberson, New York; fifth to Lt. Comdr. W. R. Holt, New York.

Prizes totalled $18,000 of which the first prize was $5,000; second $3,000; third, $2,000; fourth, fifth and sixth, $1,000. Ten $500 awards were made to Alfred Hoven, E. Grand Rapids, Mich.; The Architects' Collaborative, Cambridge, Mass.; William Lunt, Jr., Philadelphia, Pa.; Stewart Herman, Seattle, Wash.; Mr. and Mrs. Walker Johnson, Buffalo, N. Y. (two awards); A. L. Malott, Cleveland, Ohio; Helen Dunn, Milwaukee, Wis.; Robert Pfister, Rocky River, Ohio; and Gordon Nunes, Los Angeles, Calif. Winning designs are being studied to determine what features can be incorporated in the Magic Chef "Range of Tomorrow".

The jury was composed of Dr. Elaine Knowles, Peter Schladermundt, Paul Schyeikher, Edward Stone and Gardner Dailey; George Nelson of FORTUNE magazine was professional advisor.

THE NAVAL ORDNANCE DEVELOPMENT AWARD has been presented to Walter Dorwin Teague offices in New York and Los Angeles.

A SUMMER SEMINAR, "New Vision in Photography" will be held at the Institute of Design, Chicago from July 8th to August 16th. The course will give everyone in search of a creative viewpoint in photography the opportunity to hear outstanding pioneers and practitioners in the field.

IT'S YOUR HOME—PLAN IT SAFELY, a new sound film, illustrates home safety ideas designed and approved by a committee of foremost architects and builders. Further information may be obtained from the National Safety Council, Inc., 20 North Wacker Drive, Chicago 6, Ill.

THE AMERICAN INSTITUTE OF REAL ESTATE APPRAISERS is sponsoring two urban case-study courses at the University of Tulsa in Oklahoma. Further information may be obtained from the American Institute of Real Estate Appraisers, 22 W. Monroe St., Chicago, Ill.

NATIONAL SAVINGS AND LOAN LEAGUE held its Third Annual Convention in Chicago to discuss the future of private enterprise in the continued financing of America's homes.

UNIVERSITY OF CINCINNATI has raised its School of Applied Arts to the level of College and has appointed Ernest Pickering, former head of the Architecture Division, to the newly-created post of Dean. Mr. Pickering is also Chairman of the Cincinnati Planning Commission.

SAMUEL LICHTMANN, AIA, has joined the partnership of Grunsfeld, Yerkes & Koenig, 520 North Michigan Avenue, Chicago. The firm will now practice under the name of Grunsfeld, Yerkes, Lichtmann & Koenig.

JOHN CARDEN CAMPBELL, designer, has returned from service and is rejoining Worley Wong, architect, in practice at 101 Post St., San Francisco, Calif.

RUDOLPH MOCK, formerly associated with a number of leading architectural firms and since 1943 Field Representative for the O.W.I., has joined the TVA Department of Regional Studies as Staff Architect. *(Continued on page 152)*

"The Highest Quality Corrosion-resisting Pipe Obtainable at Moderate Price . . ."



ANACONDA 85 RED BRASS

THE ABOVE RECOMMENDATION was made by The American Brass Company in 1927... after exhaustive experiments which required 10 years to complete.

The performance of Anaconda 85 Red Brass Pipe in countless industrial, commercial, institutional and residential applications through the ensuing 19 years has fully justified this recommendation.

Anaconda 85 Red Brass Pipe can be specified for hot and cold water service in any type of building... with confidence that no more durable material is available at comparable cost.

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COPPER & COPPER ALLOYS

THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut

Subsidiary of Anaconda Copper Mining Company

In Canada: ANACONDA AMERICAN BRASS LTD., *New Toronto, Ont.*

ANNOUNCEMENTS

Mrs. Elizabeth Mock, Curator of Architecture for the Museum of Modern Art, will leave that post to join him in Knoxville.

NATIONAL RADIATOR COMPANY has purchased the Pullman-Standard Car Company plant at Middletown, Penna. which will make industrial products formerly manufactured at the firm's Lebanon plant.

APPOINTMENTS

COLONEL HAROLD LEE, for the past seven years general counsel for the Federal Home Loan Bank Administration, has been appointed Governor of the Bank System.

HENRY GARNJOBST is returning to the general Chicago office of the American Lumber & Treating Co. where he will be responsible for national publicity activities.

WILFRED OWEN has been named executive vice-president of Detroit Steel Products Company, manufacturers of steel windows, building panels and automobile springs.

U. S. PLYWOOD announces the appointment of Richard Dement as assistant in charge of the Armorply Division.

THE CASEIN COMPANY OF AMERICA announces that H. P. Fell and C. S. Leonardson are now vice presidents of the firm; and that they with Nils Anderson, Jr. have been appointed members of the company's Directing Board.

WALTER DAVIS has been appointed as the new Managing Director of the Indoor Climate Institute, Detroit.

CHESTER S. ALLEN has been elected President of Lockwood Green Engineers, Inc., New York, succeeding the late Albert Scott, who died on March 2nd. *(Continued on page 154)*

Available Now!



CHENEY FLASHING
3-Way Bond
16 OZ. COPPER

CHENEY FLASHING REGLET
16 OZ. COPPER

CHENEY FLASHING is again being made by the original inventor who pioneered the art of thru-wall flashing eighteen years ago.

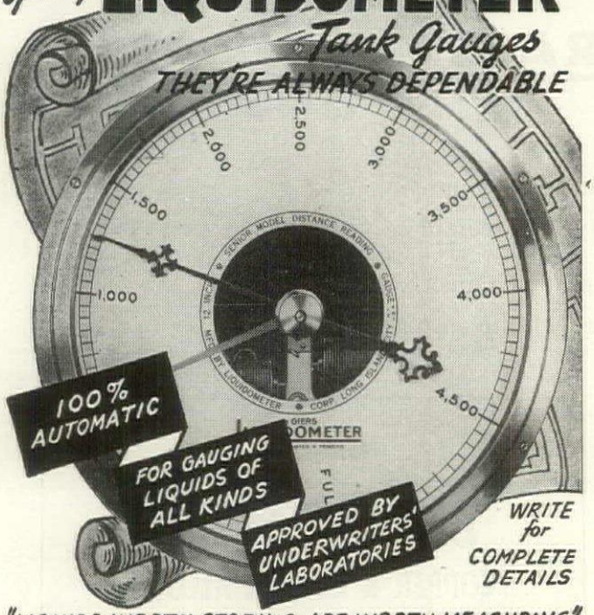
No thru-wall flashing can operate successfully unless it has the two very important features that are found in CHENEY FLASHING — proven weep-hole drainage and the three-way bond, vertical as well as longitudinal and lateral.

Remember, the inferior two-way flashings, crimped copper and membranes, have neither the vertical bond nor do they drain moisture from the wall fast enough. Furthermore, their first cost advantage has disappeared because today Cheney Flashing is no longer a specialty—it's a standard commodity.

WRITE FOR DESCRIPTIVE FOLDER Dept. F

CHENEY INDUSTRIES, Trenton, N. J.

IN PLANNING AN INSTALLATION FOR STORING VALUABLE LIQUIDS—
Specify LIQUIDOMETER Tank Gauges
THEY'RE ALWAYS DEPENDABLE



"LIQUIDS WORTH STORING ARE WORTH MEASURING"

THE LIQUIDOMETER CORP.
36-30 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

Keep Out Dust and Rain with CHAMBERLIN Metal Weather Strips

Preferred by Architects, Builders and Owners for 50 years

Chamberlin Metal Weather Strips keep out summer dust and rain, keep windows, draperies and walls clean and attractive. Adaptable to all types of windows and to new construction or modernization needs. Pay for themselves in winter fuel savings. Improve storm window efficiency. Oldest and largest weather strip service in the world. 2½ million satisfied users. All installations made by factory-trained mechanics. Chamberlin assumes full responsibility for complete satisfaction.

Call or Write—Call local Chamberlin Branch, (see phone book) or write factory for further information.

Similar Service also available on Insulation, Calking, Storm Windows and Screens



MANUFACTURERS OF THE PRODUCERS' COUNCIL BUILDING PRODUCTS

See insert in Sweet's Catalog

CHAMBERLIN
CHAMBERLIN COMPANY OF AMERICA

1346 LaBrosse Street • Detroit 26, Michigan



plan for permanence . . .

Bright new homes are going up all over the country. And screen from Saran (pronounced Sah*ran*) will help *keep* many of them looking bright and new. Saran is a plastic developed by Dow that gives screen cloth decorative color and other distinct superiorities. Saran screen doesn't rust or corrode to cause unsightly stains on painted wood or other surfaces. It's light and flexible, easy to install. But its exceptional strength prevents disfiguring dents and bulges. Saran screen retains its pliant strength on aging. It won't become brittle and crack. It withstands any kind of weather. It's not even harmed by salt air or most chemicals. Saran screen needs no protective painting. And its smooth surface makes cleaning easy. . . . Plan for permanence with Saran screen. Plan with Saran and other Dow plastics for more pleasurable homes!

let's work it out together

Success in plastics is best measured in end products. It calls for the combined efforts of manufacturers, designers, fabricators and raw material producers. Dow is ready to do its part. Save time and money—call on Dow and *get the most out of plastics.*

Screen from SARAN

PLAN NOW WITH THESE DOW PLASTICS

Saran for colorful rustproof screen; plumbing parts and equipment; name plates; wire coating; paint brush handles. Styron for brilliant lighting fixtures; escutcheons; decorative objects and trim; insulators; food-handling equipment. Ethocel for modern window blinds; extruded shapes for kitchen trim; rods, tubes and bars. Properties of these Dow plastics make them adaptable to other architectural uses under development.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago • St. Louis • Houston
San Francisco • Los Angeles • Seattle

DOW
PLASTICS

ETHOCEL · ETHOCEL SHEETING
STYRON · SARAN · SARAN FILM

ANNOUNCEMENTS

W. K. SHAW, vice president and treasurer of the Turner Construction Co., has been chosen chairman of the Building Division of the Associated General Contractors of America.

ORMIE LANCE, for 13 years secretary of Northwestern Lumbermen's Association, is joining the National Door Manufacturers' Association as Secretary-Manager.

AIR-MAZE CORPORATION announces the appointment of W. B. Watterson and Jules Gratiot as representative and engineer in California and Arizona.

WALTER SPOERL has been appointed general sales manager of the mechanical goods division of the U. S. Rubber Company.

JOHN AUSTIN has joined the Flintkote Company, New York, as Advertising Manager of the Building Materials Division.

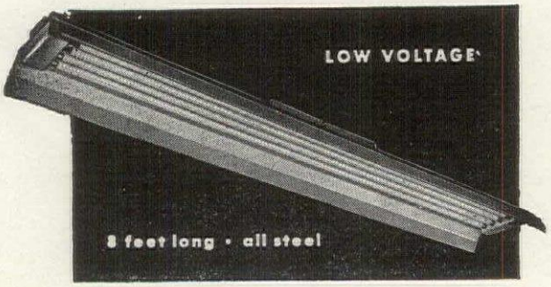
THE MENGEL COMPANY announces that C. H. Gordon Dixon is now Manager of the Baton Rouge, La. Branch; Clifford Viar is now Superintendent of the Logging Department.

JOHNSON SERVICE COMPANY has re-elected for the coming year: Harry Ellis, Chairman of the Board; Joseph Cutler, President and General Manager; Oscar Ward and Maxwell Rather, vice-presidents; Richard Murphy, secretary-treasurer.

COMPETITION

A design and an architect are sought for the Minnesota State Veterans Service Building in a competition open to all during the months from May to October 1946. Prizes of $5,000, $2,500, $1,500 and $1,000 will be awarded for the four best designs submitted, and the winner of the first prize will be commissioned to design and supervise erection (subject to registration laws of *(Continued on page 156)*

*COLOVOLT COLD CATHODE INDUSTRIAL FIXTURES



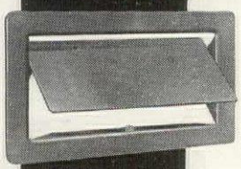
Here is the new Colovolt industrial fixture, one of a complete line of industrial and commercial "packaged" units. Equipped with the standard 93" Colovolt 10,000 hour lamp, Colovolt fixtures may be used singly or in continuous line lighting in multiples of 8 feet. Instantaneous starting, no flickering, guaranteed for 1 year except for failure due to breakage are extra advantages of the Colovolt Cold Cathode low voltage fluorescent lamp. The long life expectancy of Colovolt lamps may be realized even when constantly turned on and off, and *pre-scheduled re-lamping, with no loss of production or time, is now possible with Colovolt installations.*

Contact your electrical wholesaler or jobber, or write us for full details and prices.

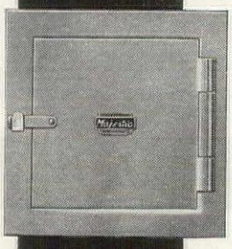
**Trade mark registered U. S. Pat. Off.*

GENERAL LUMINESCENT CORPORATION
622 S. FEDERAL STREET CHICAGO 5, ILLINOIS

Majestic
ASH DUMPS and CLEAN-OUT DOORS



Ash Dump, with free-acting lid anchored to frame



Clean-out Door has positive mortar lock!

Built for RUGGED SERVICE

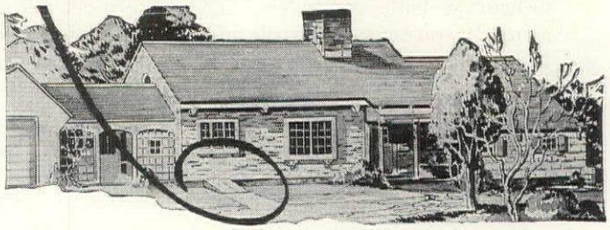
The top-quality materials and sturdy design of these typical MAJESTIC products assure lasting satisfaction in any type of building. MAJESTIC Clean-out Door and Ash Dump feature *formed steel* construction,* and are coated with asphaltum paint for resistance to rust and wear. The Clean-out Door has positive mortar lock for anchorage and a close-fitting, free-acting door. The ash-dump lid is permanently hinged to prevent dropping out. Write for details.

The Majestic Co.
1082 Erie Street, Huntington, Ind.

Formed Steel *Extra strength and durability of *formed steel, used and proved*— in Majestic units built for vital war needs, is now featured wherever possible in Majestic Building Necessities.

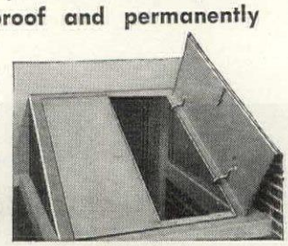
MAJESTIC—Nationally Known and Advertised for 40 Years

A MARK OF QUALITY

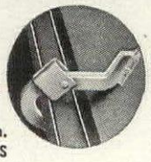


in home cellar construction

If you want the convenience and safety of an accessible cellar . . . *If* you want a leak-proof, burglar-proof, termite-proof and permanently trouble-free cellar door which will always be a source of satisfaction to you . . . *buy*



BILCO
COPPER STEEL
BULKHEAD DOORS
A Sound and Sensible Investment
ASK YOUR DEALER or write
BILCO MFG. CO.
00000 Hallock Ave., New Haven, Conn.
SIDEWALK AND BULKHEAD DOORS • STEEL ROOF SCUTTLES

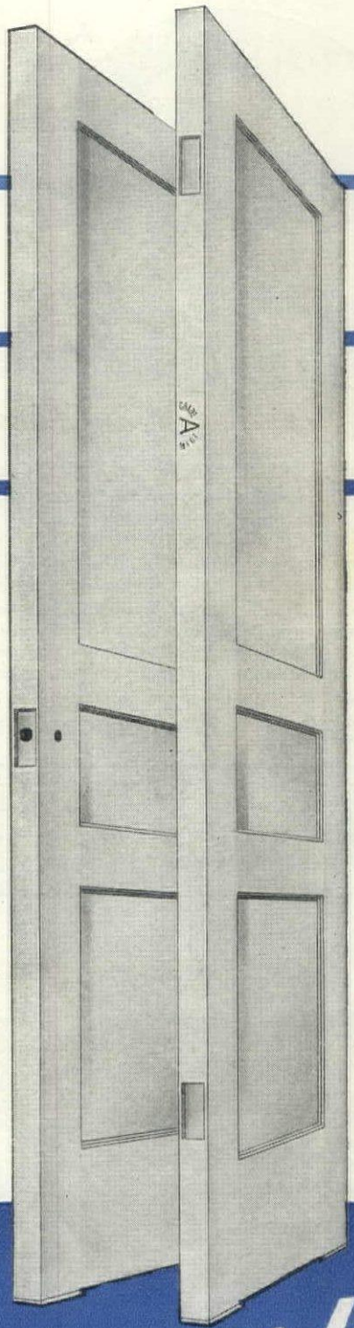


AUTOMATIC SAFETY CATCH

Reconversion Housing

Must Get First Call

on Douglas Fir Doors



HOUSING is desperately needed. Necessary materials—including Douglas Fir Doors—**must** be channeled to meet this need.

As a result—even though Pre-fit and Factri-Fit Douglas fir doors are being produced in increasing quantities—there may be further delays in filling orders for non-housing uses or for housing that does not come under the Reconversion Housing Program.

Distributors and dealers will be delayed in building up inventories. It may be difficult, at times, to buy the exact design or type of door you want.

As production steps up, however, there will be plenty of these fine, precision-made doors to meet the huge demand. We suggest that you keep in touch with your regular source of supply.

When Douglas fir stock doors are again readily available for general needs, you can be assured that they will be the finest doors which can be produced by modern precision methods. These sturdy, attractive, durable doors—made of all-heartwood Douglas fir — feature refinements which save time and labor on the job and assure better installations every time.

Pre-fit

Douglas fir doors will be available pre-fit to exact book size . . . ready to hang without on-the-job sawing and fitting.

Pre-sealed

Douglas fir doors will be available pre-sealed . . . a feature which improves dimensional stability, reduces moisture absorption, and eliminates the need for one prime coat.

Factri-fit

Douglas fir doors will be available completely machined on order—pre-fit, gained for hinges and mortised or bored for locks.

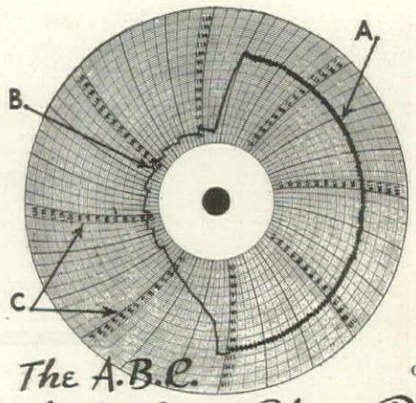
Doors will be grade-marked, of course—for ease in specification and ordering. Scuff-strips will protect the precision-cut corners during handling and shipping. They will be better doors in every way!

The National Association

Douglas Fir DOORS
FIR DOOR INSTITUTE
Tacoma 2, Wash.

Remember! NATURE MAKES DOUGLAS FIR *Durable!*

of Fir Door Manufacturers



A—High pressure process load
B—Low pressure heating load
C—Steam pressure

The A.B.C. of Uniform Steam Pressure

ASK ANY BOILER OWNER what he considers the prime requirement of any steam boiler. His answer will be: "*Uniform steam pressure.*"

THAT'S WHAT A STEAM-PAK GIVES YOU: the modulating system continually adjusts the firing rate to the load demand. Pressure remains *steady.*

NOT ONLY THAT . . . York-Shipley backs the product with a distribution plan which utilizes local distributors, whose engineering staffs *size and install* the job . . . and keep it in trim year after year.

STEAM-PAK GENERATOR

READ THE STEAM-PAK STORY IN CATALOG ID-46-1G

YORK · SHIPLEY INCORPORATED

America's Most Complete Line—Industrial, Commercial, Domestic Oil-Burning Equipment

Industrial Division YORK · PENNSYLVANIA

ARCHIE SAYS:

Here's Protection Against Burned-out Motors with PIERCE *Balanced Lag* Renewable Fuses



● PIERCE Fuses with their Balanced Lag place more of the lag within the low overload working range where it belongs. Thus, unnecessary blows and shutdowns are avoided. BUT, they *do blow* when shorts or grounds cause current surges at the higher ranges, and when failure to blow is dangerous to equipment.

Pierce Superiorities Mean More Protection

Among them: *Screen Ventilation* avoids storing of heat, permits instant escape of gases, and prevents after-blow; tubular *Arch-Bridge* construction for *long life* and *easier replacement* of the scientifically designed Pierce *Balanced-Lag-Link.*

FREE SAMPLE LINK sent for your inspection, together with complete data on renewable fuses. Just mail the coupon.

PIERCE RENEWABLE FUSES, INC., DEPT. F-6
211 HERTEL AVENUE, BUFFALO 7, N. Y.

Please send me complete data on renewable fuses, and FREE Sample of PIERCE Balanced Lag Link as checked at right.

YOUR NAME_____ [ ] 30 Amps.
POSITION_____ [ ] 60 Amps.
COMPANY_____ [ ] 100 Amps.
ADDRESS_____ [ ] 200 Amps.
P. O._____ STATE_____ [ ] Voltage

Minnesota). The building, for which a total sum of two million dollars has been allotted, will be sited on the grounds of the State Capitol in St. Paul. Prospective competitors should apply for further information to John W. McConneloug, Secretary, State Veterans Service Building Commission, 1745 Court House, St. Paul 2, Minn.

CHANGES OF ADDRESS

THE NATIONAL COMMITTEE ON HOUSING, INC. has moved to 1 Madison Ave., New York 10, N. Y.

SAMUEL GLASER, architect, is now located at 105 Newbury St., Boston, Mass.

PERKINS & WILL, (formerly Perkins, Wheeler & Will), architects and engineers, have offices at 309 W. Jackson Blvd., Chicago 6, Ill.

EARLE DRAPER, planning consultant, announces removal of his office to Suite 42, 1737 H St., Washington 6, D. C.

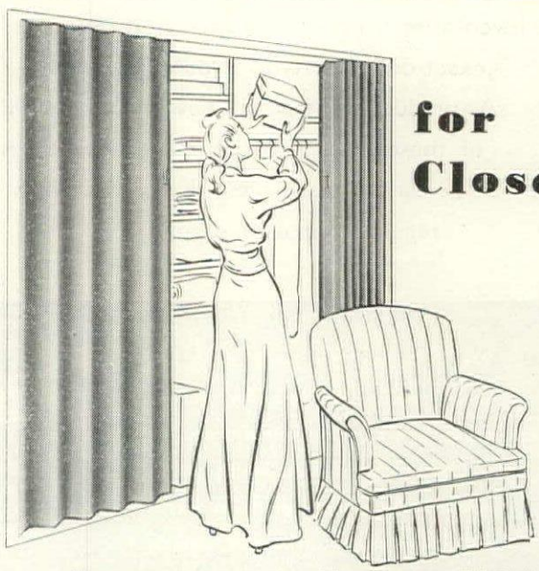
ELIZABETH AND WINSTON CLOSE, architects, having closed their office during Mr. Close's absence on military duty, are now at their new address, 65 Dell Place, Minneapolis 4, Minn.

NATIONAL ELECTRIC PRODUCTS CORP. announces the new location of their general offices on the 13th floor, Chamber of Commerce Building, Pittsburgh, Pa.

NEW OFFICES

C. DALE BADGELEY and CHARLES AKERS BRADBURY have formed a partnership, Badgeley & Bradbury, to practice architecture at 204 E. 39th St., New York, N. Y.

ROBERT W. KENNEDY and THEODORE JORDAN announce the opening of an office for the practice of architecture at 687 Boylston Street, Boston, Mass. *(Continued on page 158)*



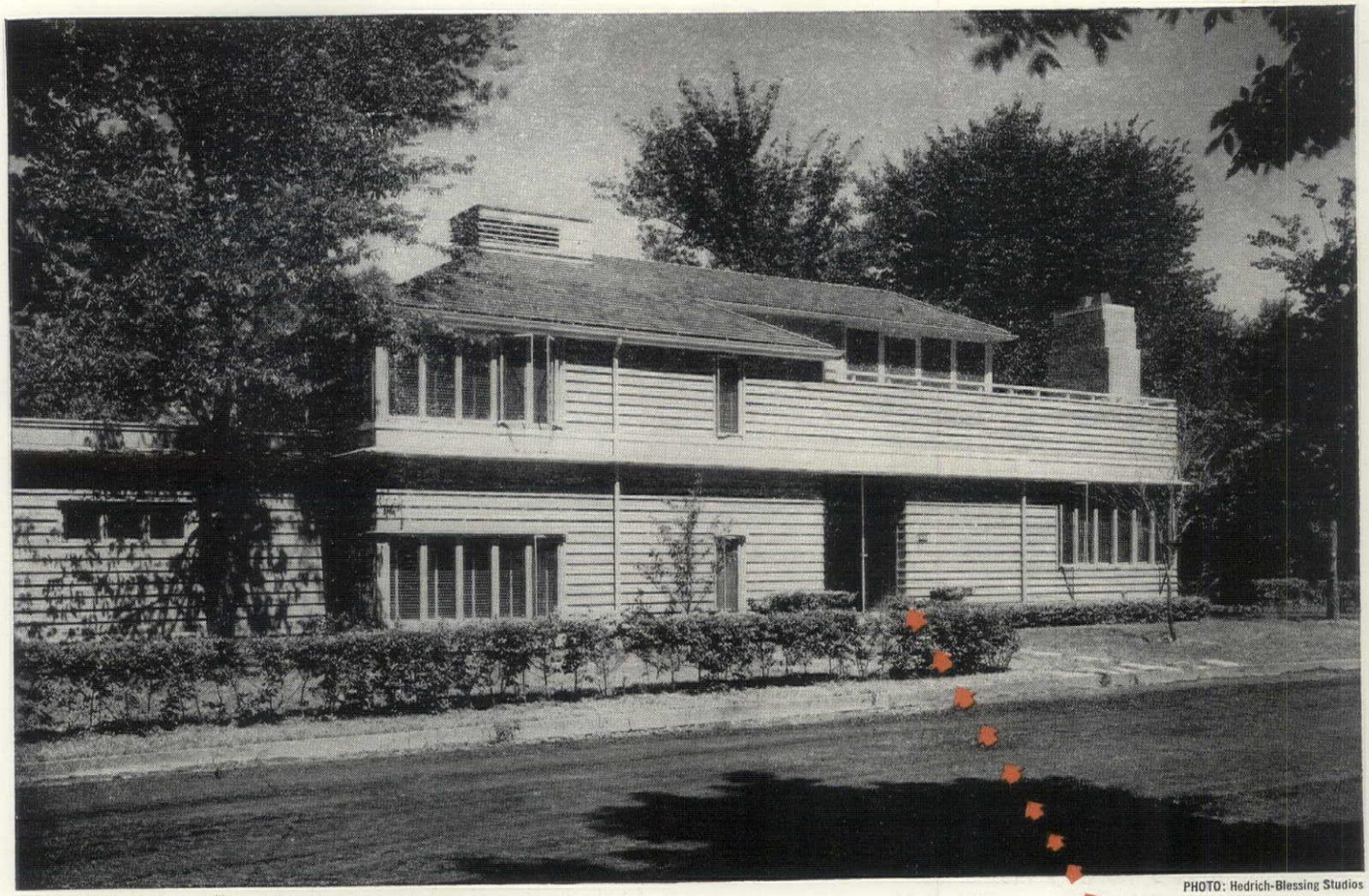
for Closets

. . . Now you can specify Super-Efficiency

Yes, closets can be *super-efficient.* Just provide your clients with beautiful, colorful Modernfold . . . the accordion-type door. It multiplies closet capacity . . . increases visibility . . . eliminates crowding . . . and makes the entire closet readily accessible. But Modernfold is never limited! You can use this fabric-covered, metal-framed door in practically every room in the residence to eliminate swing area, save space and provide a practical, economical means of room division. It is equally efficient in commercial installations. Write for full details.

modernfold DOORS

NEW CASTLE PRODUCTS
1613 I Street, New Castle, Indiana
Dealers in all principal cities in the United States and many foreign countries.



ARCHITECT: Perkins, Wheeler and Will

PHOTO: Hedrich-Blessing Studios

Presenting THE SHOW-ROOM HOMES *of the Nation*

BEST places for people to see your best-brand building products and equipment are the admired and talked-about homes in each community—the homes of the kind of people you think of when you think of the readers of TIME.

Not all show-room homes are the homes of TIME subscribers, of course—and not all TIME readers' homes are like Mr. Will's. But by and large, the 1,300,000 families who read TIME *are* high-income, influential people, well able to afford homes that are looked-up-to, looked-into, and looked-over for ideas by millions of friends and neighbors.

So—when you sell TIME readers first, you sell families whose quality-buying habits carry weight with the rest of America—and you give your products a powerful head-start on their way to setting a national trend.

TIME Subscriber #14-10-ZMH968-191 PHILIP WILL, Jr. owns this dwelling in Evanston, Illinois, which was selected by The Architectural Forum as one of the recently constructed U. S. homes most likely to influence new trends.

Don't forget: TIME families are a big market in *themselves!* Test-surveys show that nearly half a million have definite, money-in-hand plans to rebuild or remodel as soon as conditions permit. Their incomes consistently average twice the ordinary U. S. family's—they're your best prospects this year, next year, *any* year

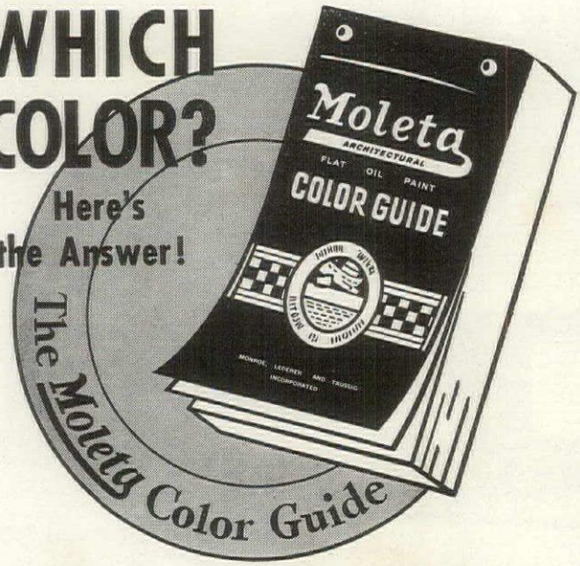
TIME

THE GATEWAY TO THE BUILDING MARKET

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CLEVELAND • DETROIT • ST. LOUIS • SAN FRANCISCO • TORONTO • MONTREAL

WHICH COLOR?

Here's the Answer!



A "find" for the ARCHITECT! This comprehensive *Color Guide* (pages 9" x 15") displays 150 beautiful colors ranging from pastels to deep shades. Formulas are given on the reverse of each color sheet to show how the shade can be quickly made. Price, $5.00 . . . delivered anywhere in the U. S. A. Write for *your copy*.

MONROE, LEDERER & TAUSSIG, INC.
606 N. AMERICAN STREET PHILA. 23, PA.

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THE TRULY WASHABLE FLAT PAINT



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LT. COMMANDER KENNETH DAY USNR, has resumed his architectural practice at 1728 Spruce Street, Philadelphia 3, Pa.

JAMES MITCHELL and DAHLEN RITCHEY, associate architects, are reopening offices at 524 4th Ave., Pittsburgh, Pa.

F. JULIUS DREYFOUS and SOLIS SEIFERTH, returned from the armed forces, are reopening their office for the general practice of architecture under the name Dreyfous and Seiferth, 328 Audubon Building, New Orleans, La.

FREDERICK W. WHITTLESEY, AIA, is resuming practice at 488 Pine St., San Francisco, Calif. Prior to the war Mr. Whittlesey practiced in Phoenix, Ariz.

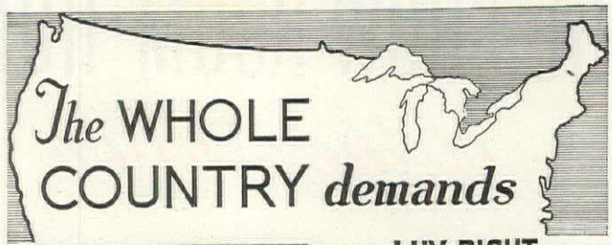
E. MAXWELL FRY and JANE B. DREW, FF.R.I.B.A., have entered into partnership and are practising at 63 Gloucester Place, Portman Square, London, W.1.

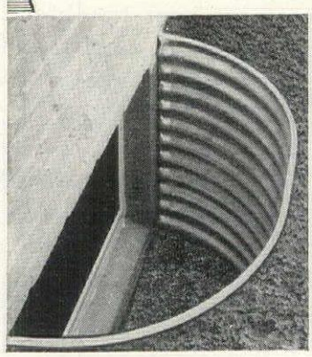
DUDLEY SMITH, CASPER HEGNER, USMC, and THOMAS MOORE, AAF announce the formation of the firm, Smith, Hegner & Moore, architects, AIA, located in the Railway Exchange Building, Denver, Colo.

LEE PERRY, AIA, is re-establishing his office for residential and commercial work at 419 North Ave., New Rochelle, N. Y.

AARON COLISH and CHARLES ETTER have formed a partnership for the practice of architecture with offices in the Architects Building, Philadelphia, Pa.

JARRETT WHITE, AIA, after 3 years as Consultant to the Surgeon General, U. S. Army, is reopening his office at 1308 18th Street, NW, Washington, D. C. *(Continued on page 160)*





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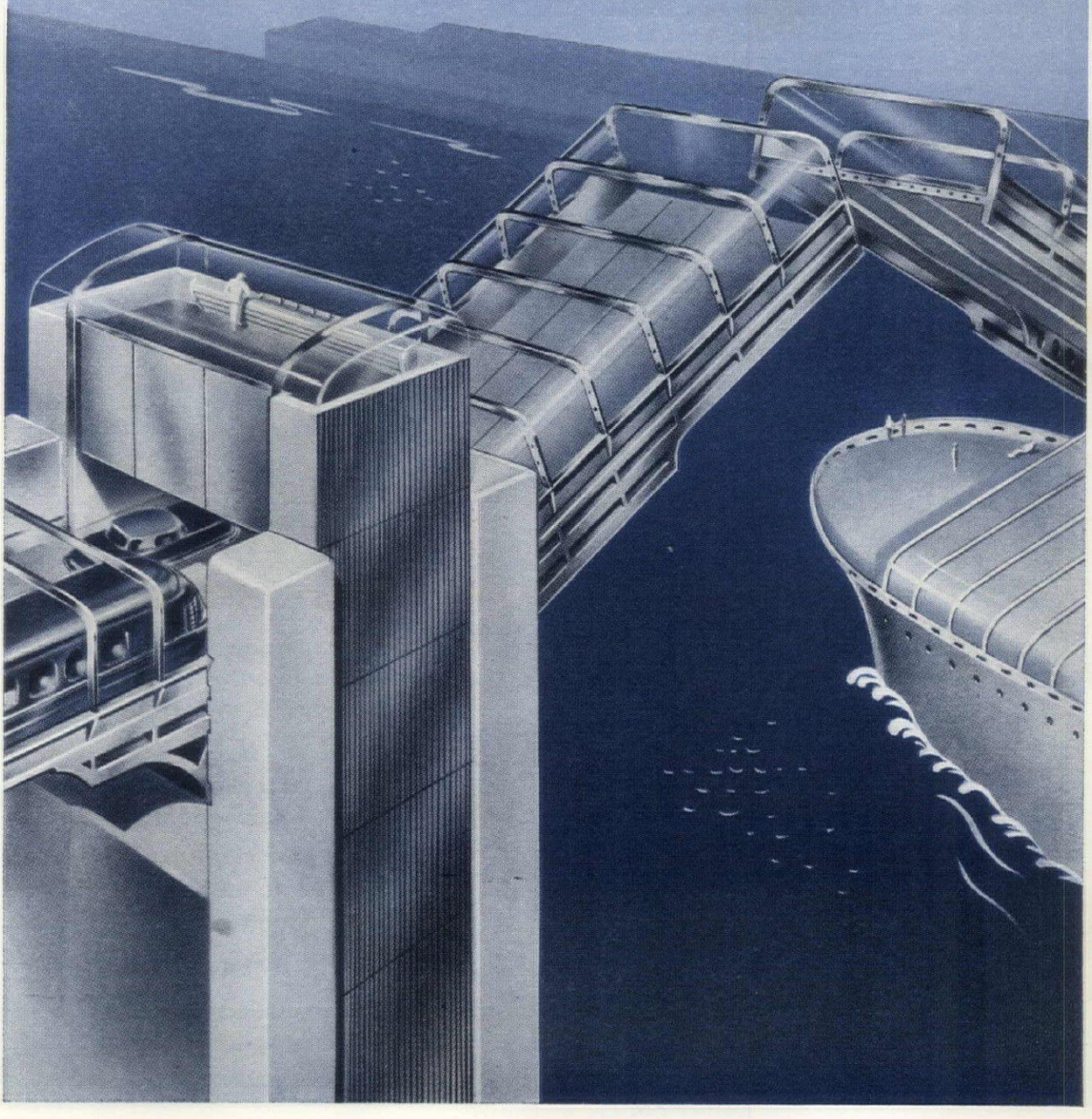
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EDWARD D. STONE announces that his New York City office at 50 E. 64th St. is now open for the practice of architecture. Associated with him will be Stanley Reese, Alexander Knowlton, J. Graham Stewart and Karl J. Holzinger, Jr.

DIED

EDWARD STEVENS, 85, architect of more than a hundred institutions in this country and abroad, in Newton-Wellesley Hospital, Mass. A student at Massachusetts Institute of Technology, Mr. Stevens served as civilian specialist with the Army Engineers in the first World War. After the war he was made a member of a special committee appointed to revise Army hospitals. Hospitals he designed were the Buffalo General, Royal Victoria, Providence Lying-In, Ohio Valley General, and the Mixto and Maternidad Hospitals of Lima. Peru. Mr. Stevens was also author of a book, *The American Hospital of the Twentieth Century*.

CORRECTIONS

In our April issue several slips appeared:

On bottom of page 7, the houser to the right is Mr. Eugene Kleber, not Kieber.

The small house shown on the top of page 125 should be credited to Talbott Wilson & Irwin Morris, Houston. Tex. instead of Messrs. Atlee B. & Robert M. Ayres.

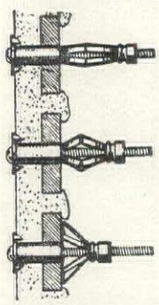
The kitchen on page 155 was designed by the firm, J. M. Little Associates, not J. J. Little.

In our March issue, page 168, we omitted to mention that David Geer, Edward Waugh and George Matsumoto, winners of the Chicago planning competition, are staff architects of the firm Saarinen and Swanson.



Easy for anyone to install for wall fixtures or accessories.

Firmly grips in any wall material.

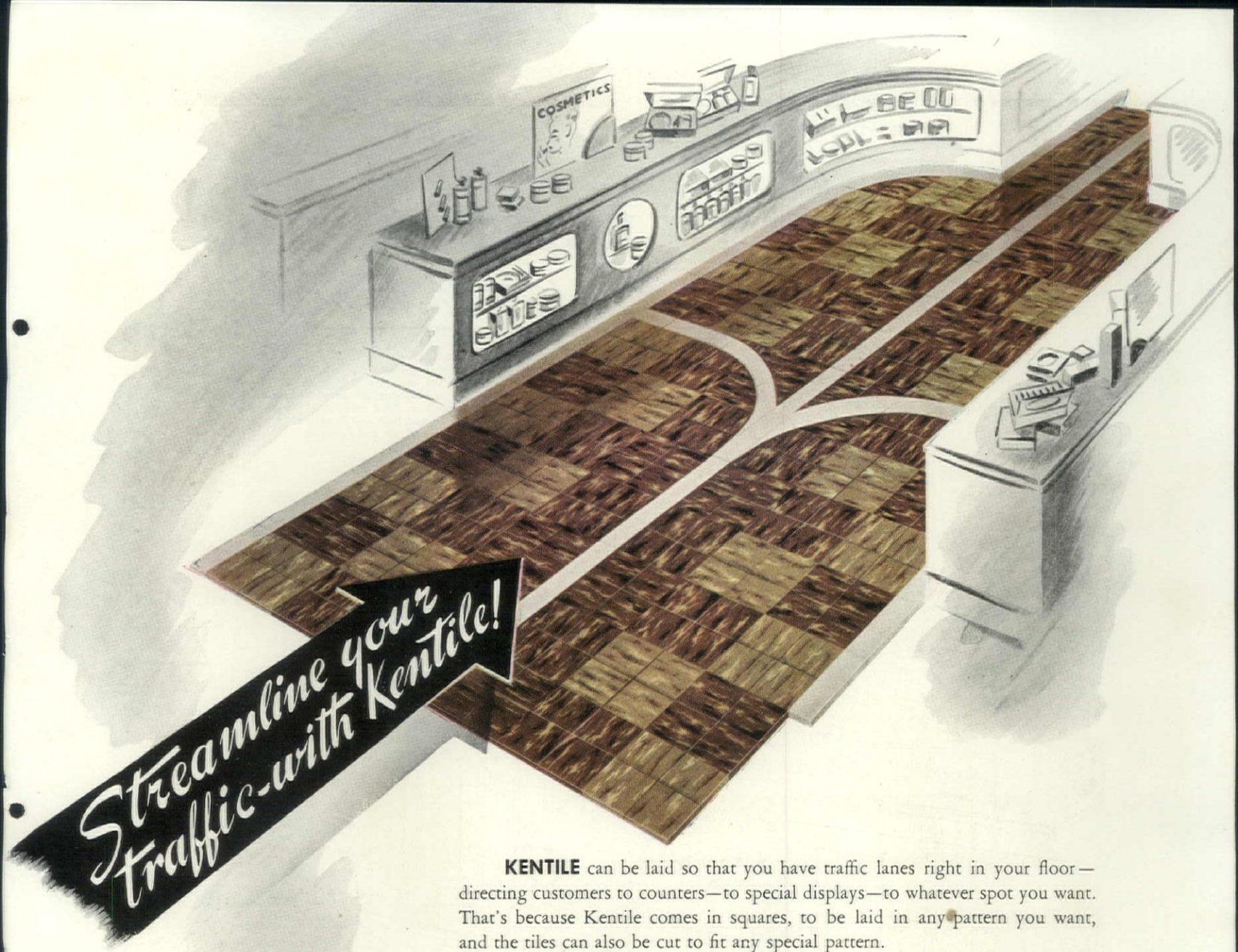


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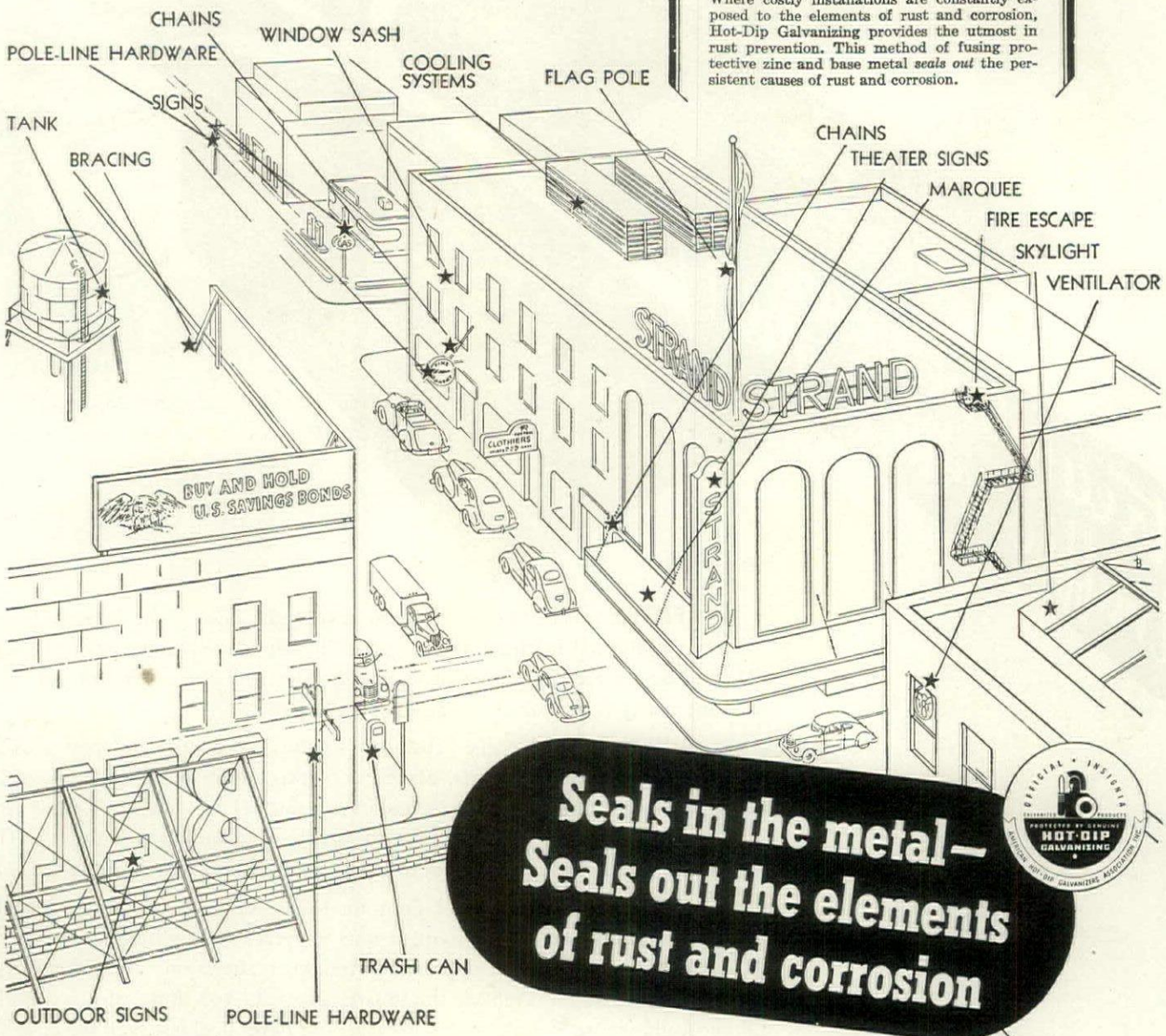
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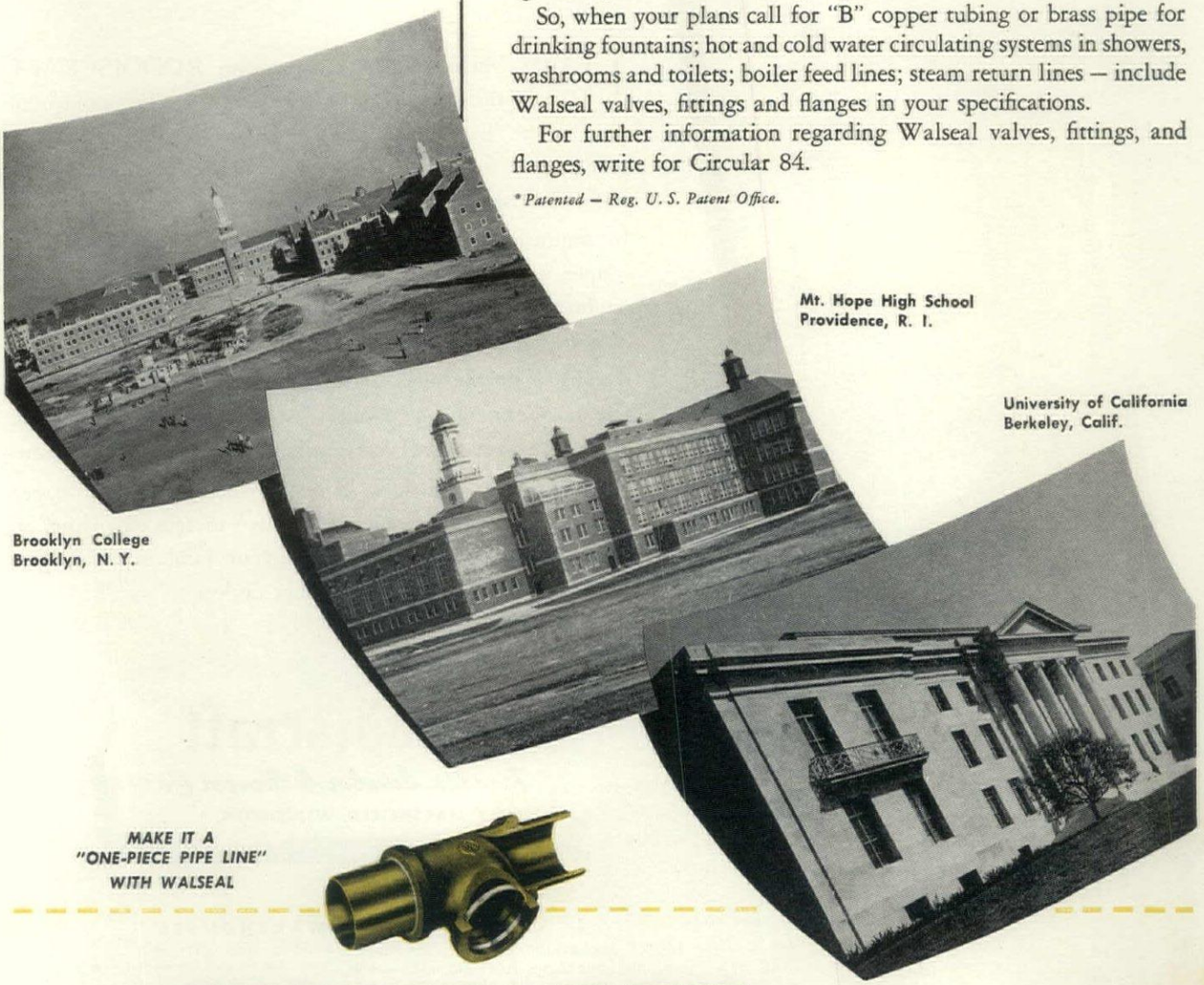
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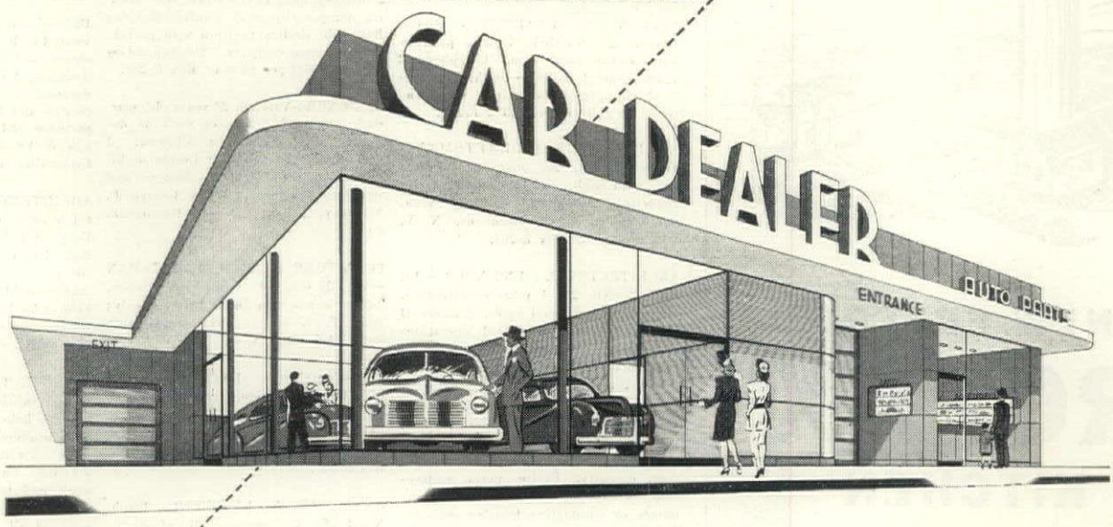
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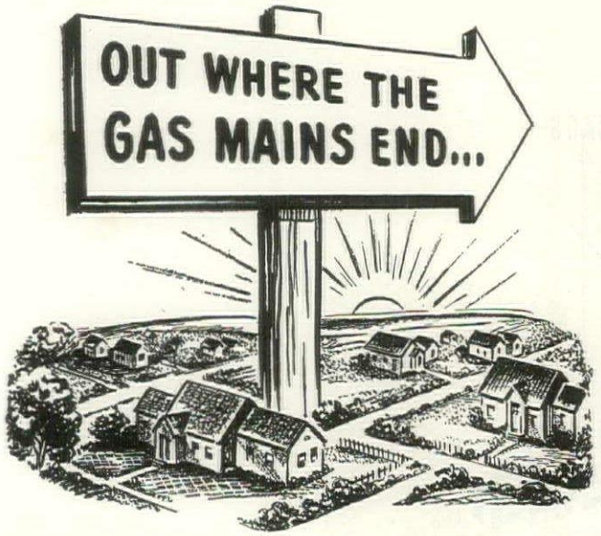
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ARCHITECTURAL DRAFTSMAN—Student. Vet, 26, married. Desires pos. with arch. or allied field in any capacity. Presently studying arch. drafting. Available afternoons. N. Y. area preferred. Box E-261.

ARCHITECTURAL ENGINEER — Lt. CEC, USNR, 27, 4 years construction, maintenance of naval bases, continental U. S. Qualified for field operations and supervision construction for architectural firm. Preferably small, in East. Box E-262.

ENGINEER—Air Corps officer, 27, B.S. in Civil Engineering, 4½ yrs. exper. with AAF in staff, engineering, and trng. capacity. Desires perm. connection with organization constructing homes or conducting housing research. East or Southwest preferred. Available about July 1, 1946. Joseph P. Sell, Jr., 517 Allen St., Allentown, Pa.

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CIVIL ENGINEER—25, discharged naval officer; limited experience, but willing and intelligent; desires position as assistant to a building contractor or architect. Especially interested in housing projects; East preferred. Box E-153.

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DESIGNER - DRAFTSMAN — Veteran wanted to be employed by veteran. Designer and draftsman for architectural designing for store fronts, and interior decorating. Ten thousand dollar residences and better. Give age, past experience and education. Write Anderson & Veatch, 223 S.E. Eighth Sts., Evansville, Ind.

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ARCHITECTURAL ASSISTANT—Architect in Hawaii would like an assistant to help with work. Should have good academic training in architecture; some office experience in designing and drafting. Should be mainly willing to work and learn. Good pay including incentive bonus. Small office with good work of all kinds. Prefer single man. Oppor. to learn arch. practice. Box R-235.

EXPERIENCED ARCHITECT—Wanted by large international construction company, architect who can assume complete responsibility for the design of large-scale housing projects, both detached single houses and apartments. Some experience in the design of large industrial building also desirable. This is a top job for a good man. Write, giving educational background and professional experience. Location in the East. Box R-236.

EXPERIENCED MECHANICAL ENGINEER—Wanted by large international construction company, mechanical engineer who has a thorough knowledge of the design and layout of plumbing, heating, sewage, and sanitary work for large-scale housing projects; one with sufficient ingenuity to develop new types of plumbing and heating for low-cost individual homes especially desirable. Some experience in laying out of high and low pressure steam, water supply, power plants, etc., for industrial projects also desirable. This is a rare opportunity for a good man. Write, giving detailed educational and professional background. Location in the East. Box R-237.

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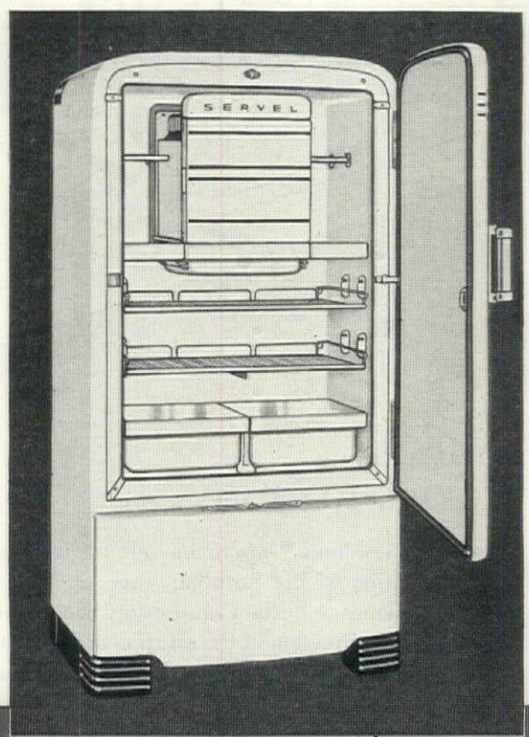
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This unmatched performance, year in and year out, is the result of Servel's simplicity of operation. There is not a *single moving part* in its freezing system. No machinery to cause noise or wear. A tiny gas flame does all the work . . . circulates the refrigerant that produces constant cold and sparkling cubes of ice.

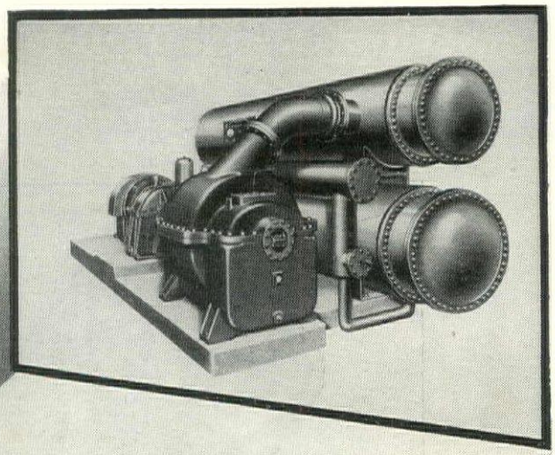
So plan now to provide outlets for silent, long-lasting Servel Gas Refrigerators in your current designs and construction work. For complete information on this famous refrigerator, consult Sweet's Catalog. Or write today to Servel, Inc., Evansville 20, Indiana.

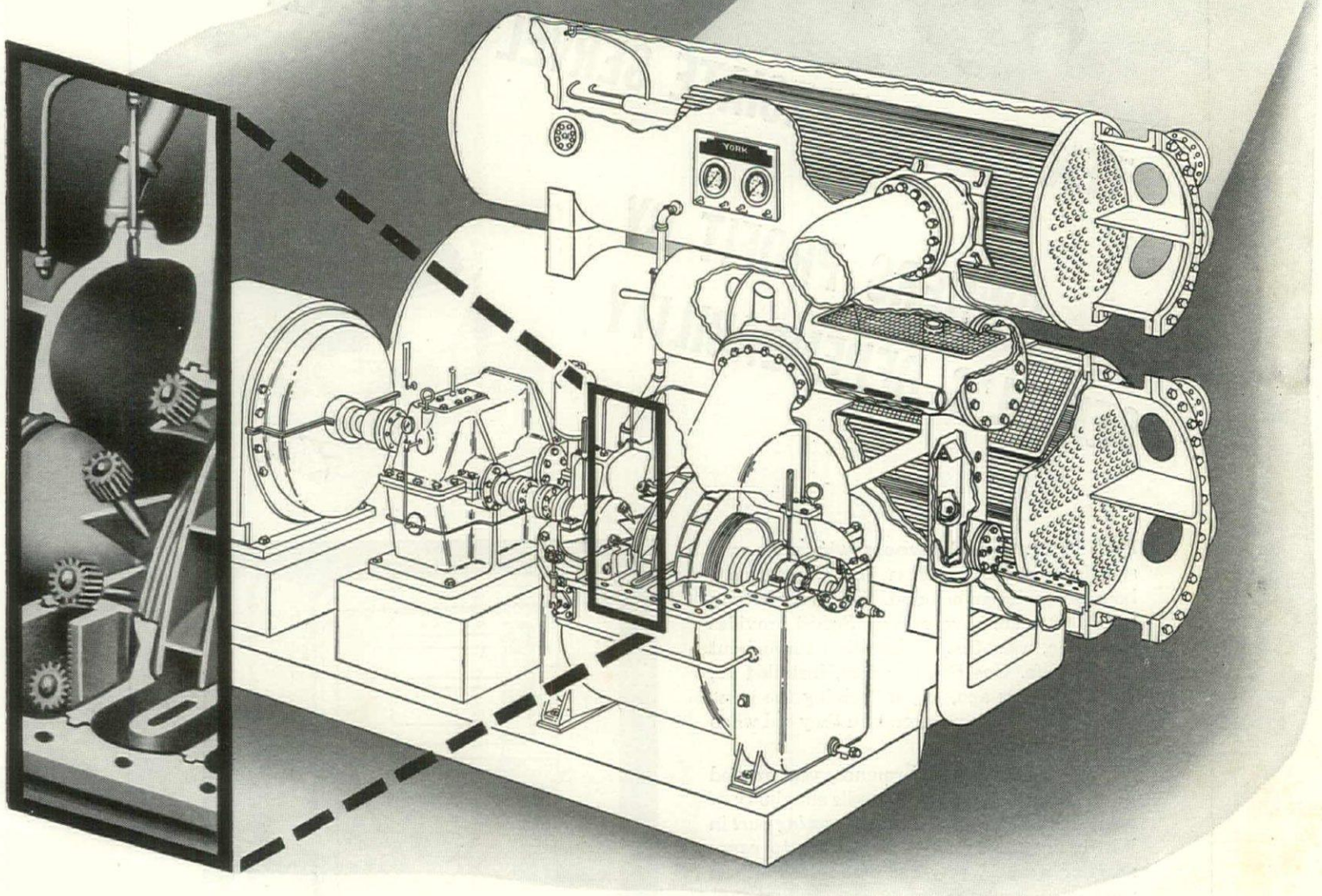


STAYS SILENT
LASTS LONGER

Servel GAS REFRIGERATOR

For Capacity Control
PRE-ROTATION VANES





The YORK Allis-Chalmers Turbo REFRIGERATION Compressor

Capacity control to extremely low limits—approximately 10% of load—is achieved by the incorporation of Pre-Rotation Vanes in the construction of the York Allis-Chalmers Turbo Compressor. Such control is accomplished by changing the direction of the rotation of the suction gas entering the first stage wheel. Each change produces the same results as would be obtained from a separate machine of smaller size. York Corporation, York, Pennsylvania.

Other Outstanding Features

1. Low center of gravity of compressor—permitted by trough type cooler—cuts vibration, provides accessible operation.
2. Stainless steel impeller blades resist erosion and corrosion assuring perfect wheel balance. Blade rivet heads are eliminated to provide unobstructed gas flow.
3. Balance piston to equalize wheel thrust makes necessary only a positioning thrust bearing, and results in less bearing friction losses.
4. Simplified refrigerant shaft seal.
5. Permanently silver-sealed condenser joints.

YORK REFRIGERATION AND AIR CONDITIONING

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

York refrigeration air-conditioning

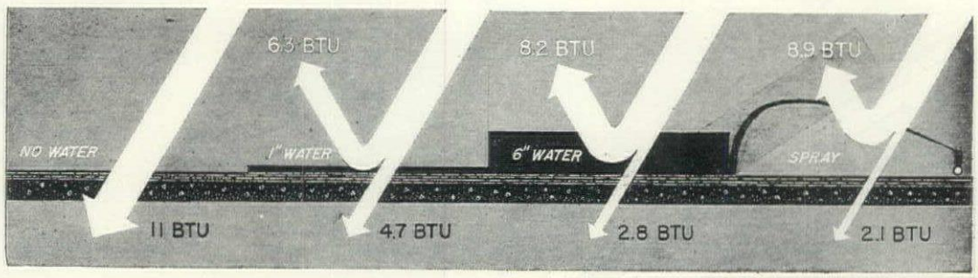
WATER COOLED ROOFS: the startling efficiency of an old and obvious technique is now proved by both laboratory tests and working installations across the country. A description of the methods used and results achieved.

A good roof, in addition to keeping the rain out, should exclude solar heat in the summertime and hold in man-made heat in the winter. As any architect knows, this is a much more complicated problem than it seems at first glance. The problem of summertime comfort is especially tricky. The very property which makes thermal insulation desirable in cold weather—its ability to delay the passage of heat—works against it in summer. Surface temperatures of 150° and higher are common on roofs in midsummer: and, once heated up, the roof membrane, framing and insulation are apt to act as a source of heat rather than a shield against it. To circumvent this, many architects took to placing the thermal insulation directly above the ceiling rather than immediately under the roof and then ventilating the space between. This helped a lot but what was still needed was a technique which would intercept solar heat before it ever got into the roof structure proper. In the water-cooled roof, it looks as if such a technique has been evolved. Using water either in a shallow pool or in a flat spray, reductions of up to 80 per cent in solar heat transmissions are being achieved throughout the country. And—unlike other methods which might achieve the same results—water cooling can be applied to almost any roof, new or old, flat or pitched.

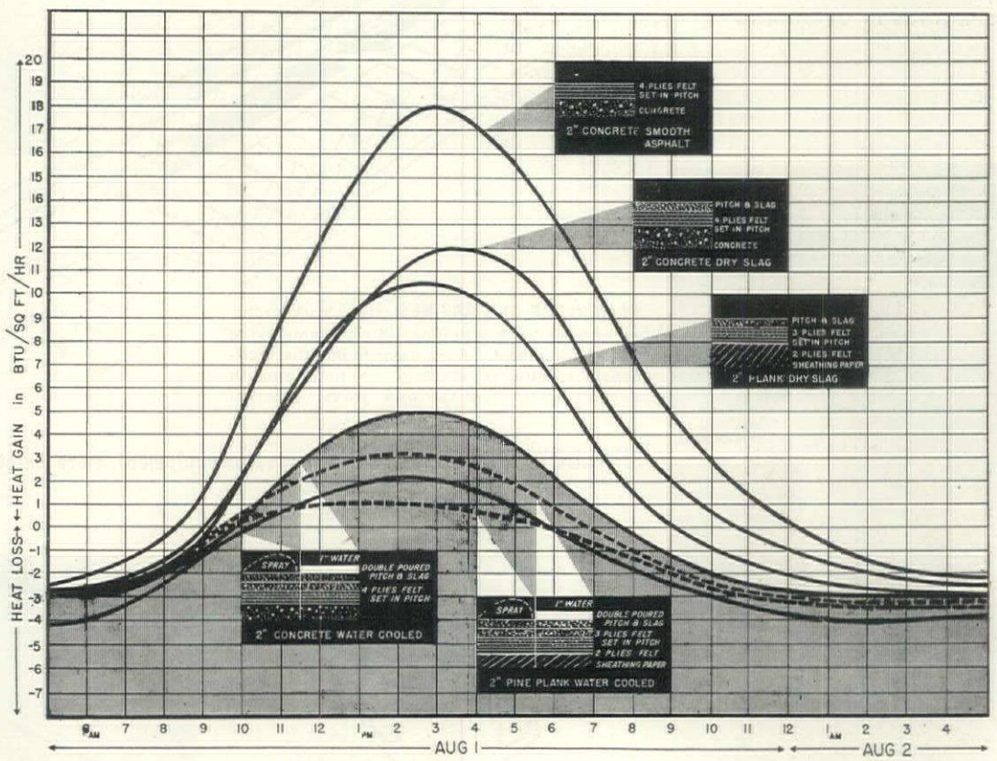
Even before the war, a number of buildings (mostly in Washington, D. C. and California) had water cooled roofs which delighted owners and proud designers were boasting about. But not until 1940 were controlled tests made* and a floor of scientific data placed under their rosy claims. These very accurately recorded tests revealed that, no matter what type of roof construction is employed, a great reduction in heat flow is achieved by water on the roof surface. On a typical September day, roofs with 1 in. and 6 in. sheets of water and with water sprays showed maximum heat flows of 4.7, 2.8 and 2.1 b.t.u. per sq. ft. per hr., respectively. The average heat flow through dry roofs of the same construction on that day was 11 b.t.u. On another day, a sprinkled roof of wood construction admitted *94 per cent less heat* than a dry one of concrete with identical exposure!

Although there is general agreement as to what water does, there is not so much data as to exactly how it does it. Obviously, both reflection and evaporation are involved in the process, solar heat being mostly *reflected* by the water sheet and *destroyed* by evaporation in the water spray. But it would take a very patient physicist to decide the exact proportions in each case. And at the present time, it

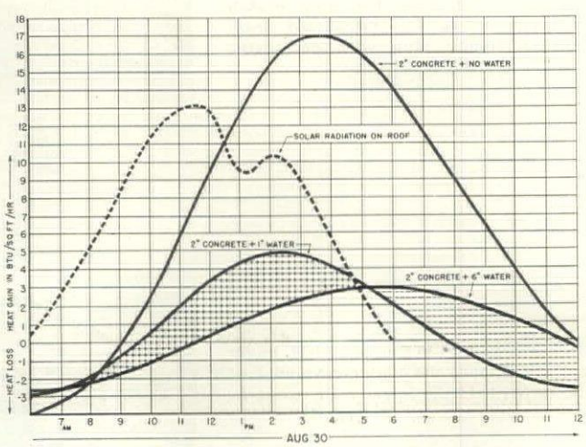
* By F. C. Houghton, H. T. Olson and Carl Gutberlet, all members of the American Society of Heating and Ventilating Engineers' Research Laboratory. Tests were fully described in ASHVE Transactions, Vol. 46, 1942.



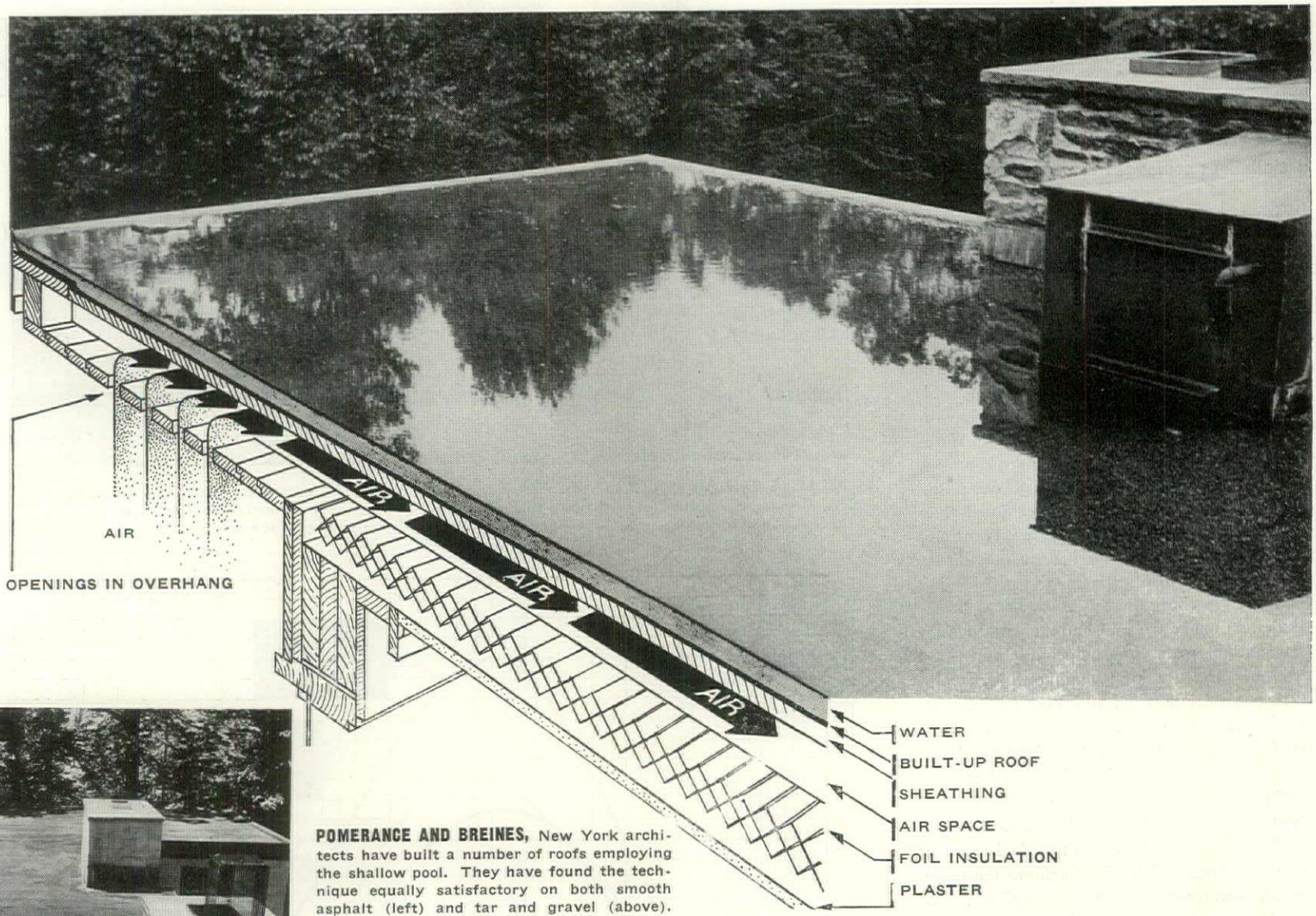
RELATIVE COOLING EFFECT of roof pool and spray is graphically demonstrated in this diagram. Based on controlled scientific tests, it shows that water in any form is an effective barrier to solar radiation. Pool depends primarily upon reflection, spray upon evaporation, for effectiveness.

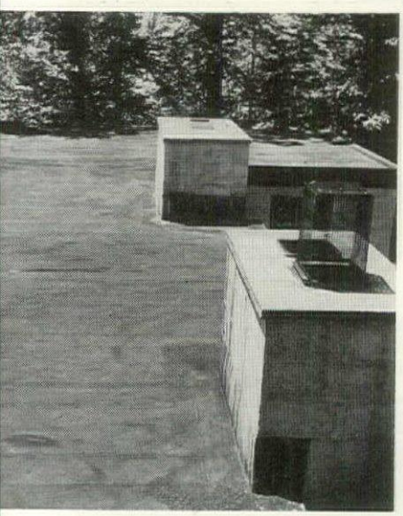


FIVE TYPES of roof construction, tested under identical conditions, left no doubt as to effectiveness of both methods of water cooling. Heat entering the building through a pool-cooled roof was less than half that of even the coolest of the dry roofs, while the sprinkled wood-sheathed roof transmitted eighteen times less heat than the hottest concrete one. This illustrates superior insulating performance of wood sheathing—either dry or wet—as against that of concrete deck.



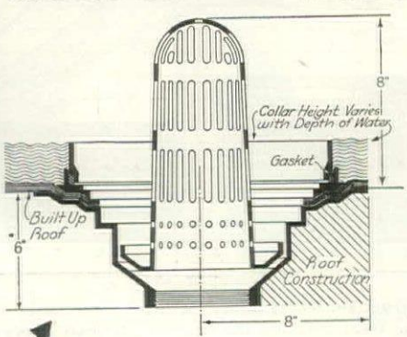
NOONDAY SUNSHINE makes 4 o'clock heat. The time-lag between impinging of solar heat on a roof and its transmission through the roof is clearly seen in chart at left Note also that this same lag is evident in water cooling by the pool technique: 1 in. pool admits more solar heat than a 6 in. pool, but the 6 in. pool acts as a heat reservoir until midnight.

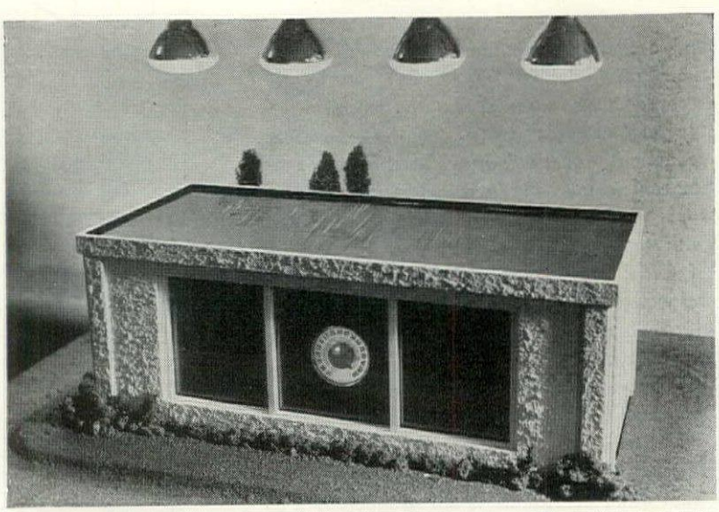


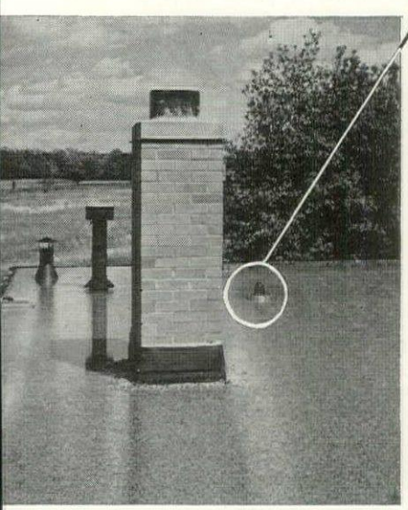


POMERANCE AND BREINES, New York architects have built a number of roofs employing the shallow pool. They have found the technique equally satisfactory on both smooth asphalt (left) and tar and gravel (above).

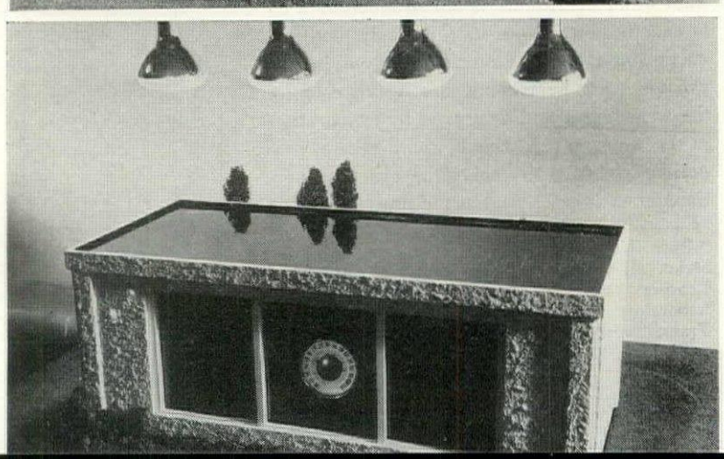
SHALLOW ROOF POOL demands less equipment, more maintenance, than spray.







GEORGE FRED KECK, Chicago architect, has used a 1 in. deep pool as a standard feature on many of his houses, including prefab shown at left. Note adjustable roof drain and exposed supply pipe with perforated splash box.



TEST OF A MODEL by LIFE proved that, under identical conditions, the water-covered roof (bottom, right) held the interior air temperature to 85°, while the dry roof ran it to 110°.

is a matter of academic interest anyway. Both methods work well, they can be adapted to any type of roof, are inexpensive to install and relatively cheap to operate.

The shallow pool is simplest.

The roof pool is the simplest method of watercooling. Sole requirements are a level roof with a double surfacing of pitch or asphalt, a 6 in. water tight coping, a supply pipe and an adjustable drain. The weight of one or two inches of water (5.2 or 10.4 lbs. per sq. ft.) can usually be handled by most roof constructions. Since the system is cut off in winter, the supply pipe can be run up outside the wall. And a simple roof drain with an adjustable collar which can be set for any desired pool depth (2, 4 or 6 in.) in summer and zero depth in winter, is a stock item with many companies.

At least two architectural firms—Pomerance & Breines in New York City and George Fred Keck in Chicago—have already employed the shallow pool on a number of their pre-war houses. Both are enthusiastic about the results. Keck has made the water-cooled roof an integral feature of his design for the Green Ready-Built Houses. (FORUM, July '45). In these prefabs, Keck frames his roof of interlocking plywood panels with built-in insulation and an integral coping. Over these panels he lays a built-up roof of felt and pitch, topped by gravel in conventional fashion. Drains hold the water level to no more than 2 in.

Pomerance and Breines have used the shallow pool method on both tar-and-gravel and smooth asphalt roofs with equal success (see facing page). Prior to roof-cooling, they had been venting their flat roofs so that a column of moving air lay between the roof proper and the insulation material. They found that the addition of a 1 or 2 in. pool increases the summertime efficiency of this roof to a remarkable degree—and with very little added trouble and expense. They have worked out an ingenious gauge consisting of a float on the roof connected (by means of a vertical rod extending down into the house alongside the supply pipe) to a calibrated scale. This makes it a simple matter for the home owner to check the pool depth and add water as needed without going near the roof. The architects point out that the whole operation could easily be made automatic by using the same float-and-valve rig as the ordinary water closet.

In an experiment by LIFE, a small scale model house with a water-cooled roof gave a dramatic illustration of the effectiveness of the shallow pool. Under four infra-red lamps, with the roof dry, the temperature inside the model shot up from 70° to 110° in half an hour; under identical conditions with a ½ in. sheet of water on the roof the temperature rose from 70° to 85° in a half hour—a difference of 25°! Such tests as these indicate the positive values of the pool-type insulation.

Striking though such figures are in establishing the theoretical value of the roof pool, they make no allowance for a number of practical considerations which have to be solved before the system will work satisfactorily in actual use. In the first place, the pool works chiefly on the principle of *reflecting* solar energy—evaporation being a secondary consideration. Both the ASHVE and LIFE tests were conducted with clean water on a clean surface—conditions which would be difficult to maintain in practice. An accumulation of soot, dust and oil on the water would tend to reduce reflectivity and retard evaporation of the pool. This in turn would cause the water to heat sooner and to a higher degree. Thus in very hot and humid weather the pool would tend to become a secondary source of heat. This tendency is quite evident in the ASHVE tests (p. 165). Though the 6 in. pool was twice as effective as the 1 in. pool in interrupting solar radiation at 2 p.m., the deeper pool was still radiating heat into the building long after the shallow one had cooled.

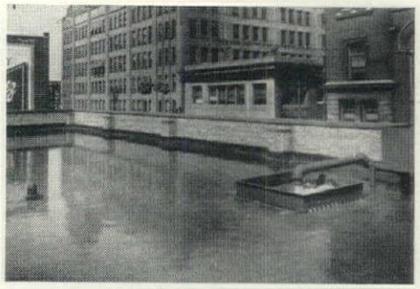
Another drawback to the roof pool is the fact that—unless preventive measures are taken—it is apt to become a breeding place for both mosquitoes and algae. Draining the roof and allowing it to dry thoroughly every ten days or two weeks would control mosquitoes and most types of air-borne algae. The same preventive measures can be achieved by adding chemicals to the water. But such control measures reduce somewhat the system's simplicity of operation.

Finally, of course, there is the fact that the pool is applicable only to perfectly flat roofs.

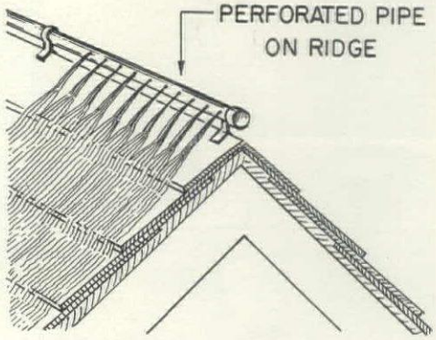
Roof spray yields high cooling rate.

Another technique for water cooling roofs can be applied to any type of roof no matter how steeply pitched or irregular in profile. This is the spray or sprinkler method. Actually, proponents of the spray method of roof cooling can point to more extensive experience and more dramatic results than those of the shallow pool. In the August 1st ASHVE tests, the sprayed roof *was eighteen times as effective as a dry roof in excluding solar radiation* It was over twice as effective as a 1 in. pool of water and a little more efficient than 6 in. of water in the Sept. 8th tests. And, unlike the pool, there was no time lag between maximum sun heat and maximum heat penetration into the building.

The roof sprinkler, in contrast to the pool, relies for its principal cooling power on high evaporation. The system is very simple: nozzles are spaced to cover the entire roof surface, pipes being laid on top of the roof surface. Nozzles are designed to give the greatest possible range of dampening spray with the least amount of water. The nozzle yields a cone-shaped hollow spray of varying diameters and cross-sections. This not only saves water but insures greatest cooling effect, since it produces the highest degree of evaporation. At the same time, the spray is kept from being so fine as to become a mist, for then (although the surrounding air is cooled) some of the solar radiation penetrates it to hit the roof below. With a properly adjusted spray, sprinkler installations have a record of reducing under-roof temperatures from 8° to 15° F. The variety in range depends to some extent on the location of the building. In a dry climate like Arizona, where evaporation rates would be high, the heat decrease would be more than in a damp coastal climate. In all cases, however, the improvement is evident. Top floor temperatures moderate to average shade temperatures and in some cases are actually cooler.



PERFORATED SPLASH PAN used to break force of water and distribute it equally on large roofs using shallow pool technique.



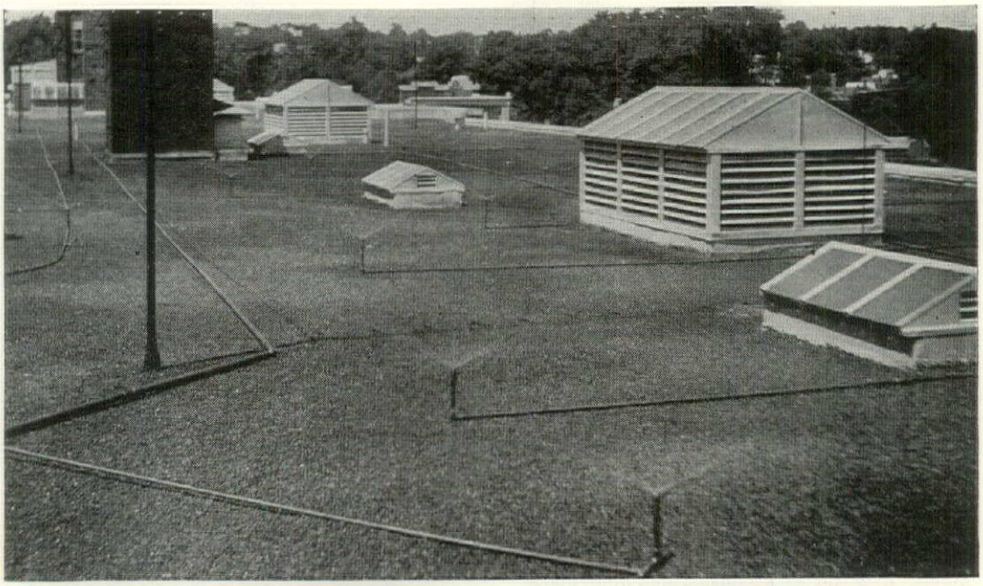
PITCHED ROOFS can also be cooled by a perforated pipe along ridge, with flow of water adjusted to keep entire roof surface damp.

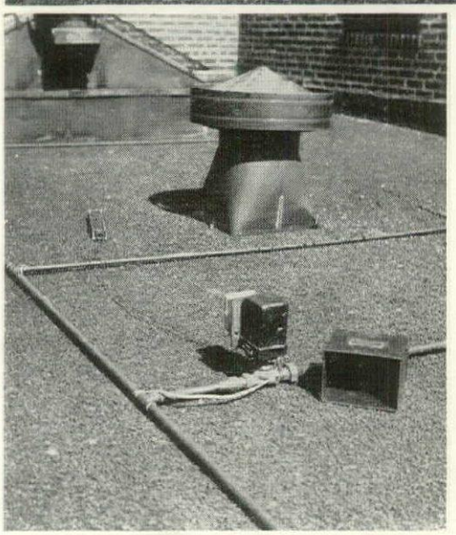
Although comparatively new as a cooling aid, spray systems have proved their worth in an amazing variety of buildings. One particular advantage of the sprinkler is the fact that it operates well in building types which are difficult to air-condition. Laundries, one-story factories with large roof areas, uninsulated ceilingless supermarkets, skating and bowling rinks, lofts, warehouses—are all naturals for the spray cooled roof.

As a matter of fact, poor roof insulation helps the cooling operation of a sprinkler, since it permits more immediate transmission of roof coolness to the air beneath. Warner Brothers found that the upper floor of their large property building in California became so warm that not only were employes uncomfortable, but the furniture was deteriorating—a situation which roof sprinklers immediately remedied by reducing air temperatures by between 10° and 15°.

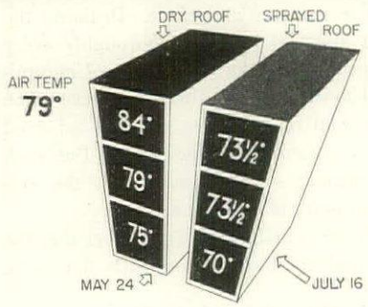
A North Carolina hosiery factory, by adopting such a system, found not only a substantial improvement in summer comfort but the solution to a long-troublesome problem of sky glare through the continuous roof monitors. (see cut, p. 168). Here the cones of the individual sprays interlocked to form a continuous thin sheet of water over an irregular roof surface—a situation in which the pool could not have been employed at all.

During the war, the installation of sprinkler systems was at first rated as merely a "comfort" device and drastically curtailed. As



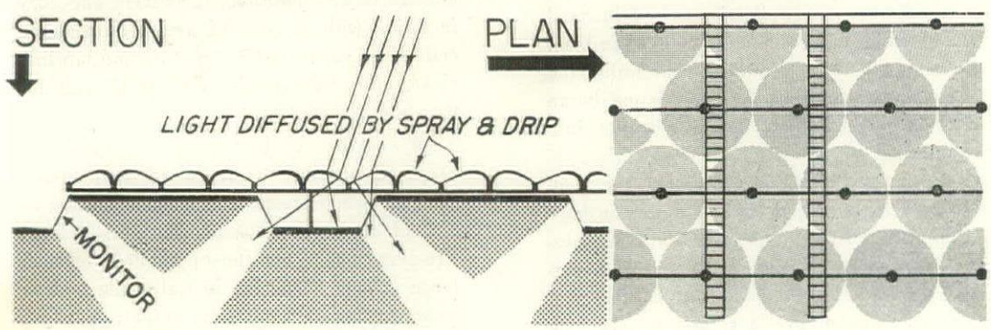


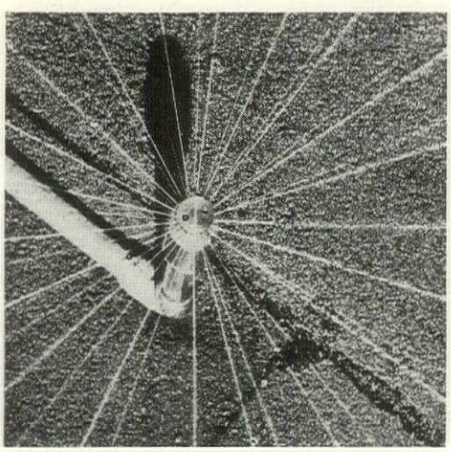
Photos: April Showers, Inc.



OPERATING ONLY ONE MINUTE out of seven during the day, the spray system on the roof of this Washington, D. C., apartment house achieved the heat reductions shown in diagram above. The automatic thermal control, with weatherproof housing removed, is shown at left: it turns sprays on only as roof temperature passes predetermined point.

ROOF SPRAYS, though somewhat more expensive to install and maintain, are more efficient.





ROOF SPRAYS on a Carolina hosiery mill sharply increased comfort conditions in the plant. Not only did they reduce temperatures by 10 to 12 degrees; they also reduced sky glare in glass monitors by keeping them wet, since automatic control turned on sprays before roof surface dried.

DETAIL of one of several sprays on the market, this has two cones of fine spray. Nozzle is adjustable so angle and radius of spray can be modified.

time progressed, however, its use on one essential building after another demonstrated its advantages. Proven efficiency, economy and adaptability to air-conditioning equipment ultimately won it a high priority rating.

Roof spray aids air conditioning.

A. B. Tappan of the Water Cooling Corporation, New York, was asked to make an estimate on the cost of a sprinkler installation for the 400,000 sq. ft. roof area of a Long Island airplane factory. It was estimated that the building, as originally planned, would require refrigerating equipment of 1,080 tons capacity. Cost was approximately $200 per ton: with roof sprinklers, cooling capacity was reduced to 800 tons—a cost saving of $56,000. Since the complete cost of the sprinkler system for the building was less than $20,000, an immediate saving of over $36,000 was effected. This cooling method was so satisfactory that it was adopted for two later factories.

Not only does the use of a sprinkler system reduce the amount of equipment necessary to cool a building (in some cases by as much as one-third) but it has solved other problems of air-conditioning installation and maintenance. Leonard Holder of the April Showers Company, Washington, D. C., cites two actual examples of this. In the first case, the refrigeration supply pipes were run over the top floor ceiling, protected from the roof by 4 in. of insulation. In spite of this shield, so much heat passed through the roof that the refrigerant was entirely absorbed before it could have any effect on cooling the room below. When enough refrigerant was circulated to make this room comfortable, people on lower floors complained of being cold. A roof spray, dissipating solar heat before it ever hit the roof, allowed the air-conditioning to provide an even temperature throughout the building.

In a second case, that of a newly-built apartment house, the top story cooling pipes were run under the floor—perhaps to avoid a condition such as the above. The cooling system here functioned properly; but it was noticed that during the summer long vertical cracks opened in the top floor wall plaster. These were especially evident at the end of a hot day, and usually followed the line of the columns. Investigation proved that they resulted from roof expansion checked abruptly below the ceiling by the interior cooling system. Here, too, a spray was the solution.

It is also possible to adapt the sprinkler system to pitched roofs. One simple arrangement is to run a pipe along the roof ridge with several half-circle spray heads to form continuous sheets of spray down each side. This type requires fewer heads than a flat roof and is slightly cheaper to install. Its operating cost is a bit higher, since a little more water runs off before it can evaporate. Such a system could be used to cool the saw-toothed type roof used on many industrial buildings. Its application to a great number of small houses is obvious, and the owners of houses in which such a spray has already been installed testify to its great cooling benefits in making top floors and attics comfortable. They add fur-

ther, in its favor, that the water used in cooling the roof did not add noticeably to their monthly water bill, and also, that the spray is so fine it makes no noise falling on the roof.

The most ingenious method evolved to date of insuring automatic operation of the sprinkler system is a thermostat manufactured by Minneapolis Honeywell for the April Showers Co. This thermal control is adjusted to turn on the spray whenever roof heat reaches a predetermined temperature. This temperature is usually the lowest point to which the roof surface can be held during the summer in that particular location. In some parts of the U. S. it may be 73° F; in others 90° F—strikingly low figures compared to the average summer roof heats of 130° to 160°. Since the thermostat turns sprinklers on only when the warming point is reached and closes them down as soon as the roof drops below this point, maximum cooling and minimum water consumption are guaranteed.

Water consumption held to minimum.

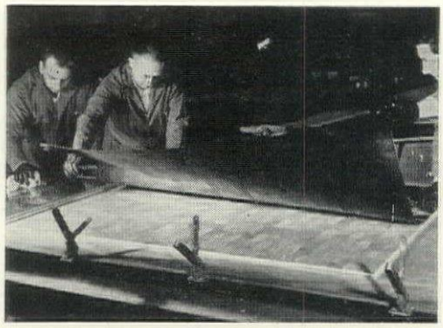
In most localities the amount of water used to cool the roof should not present too serious a problem. Spray heads now on the market covering a 15 to 18 ft. radius use less than a gallon per minute. One company makes its estimate in terms of square feet, claiming that a gallon of water per minute, sprayed intermittently (under thermostat control) will keep 540 sq. ft. of roof cooled to a few degrees above wet bulb temperature. Another says that 10,000 sq. ft. can be sprinkled throughout a complete Washington season for only $10.00.

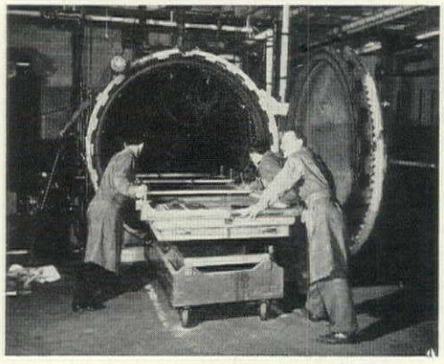
In placing the spray heads, the principal consideration is to spot them where they will cover the roof entirely without overlapping. An equilateral triangle has been taken as the most workable basic pattern. To fill in corners and edges, nozzles are available to throw spray in half and quarter circles, as well as at any desired angle. This last insures that water can be held below the roof parapet.

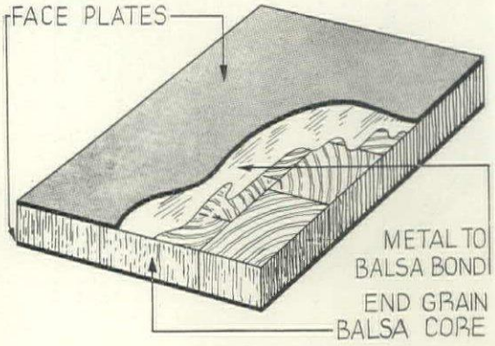
Experience has indicated that—with both pool and spray type cooling—it is desirable to keep all piping and equipment above the finished roof. This reduces cost of system, eliminates danger of condensation and drip, and makes maintenance of system easier.

It is also a fortunate coincidence that the water-cooled roof has won the hearty endorsement of the roofing materials manufacturer. Far from having a deleterious effect on tar, pitch and asphalt, a protective coat of water will preserve the roof for three or four times its usual span. In reducing the temperature of the roof membranes by from 30° to 60°, expansion and contraction is minimized and the evaporation of volatile oils greatly reduced.

The installation cost of water cooling is negligible. In the pool, it involves only supply lines and extra application of tar and gravel (the drain would have to be there anyway). In the spray method, the cost is not high and the design of both roof-cooling systems is so simple and their effectiveness so great, that it seems likely that the water-cooled roof will soon become a standard feature on many types of building.







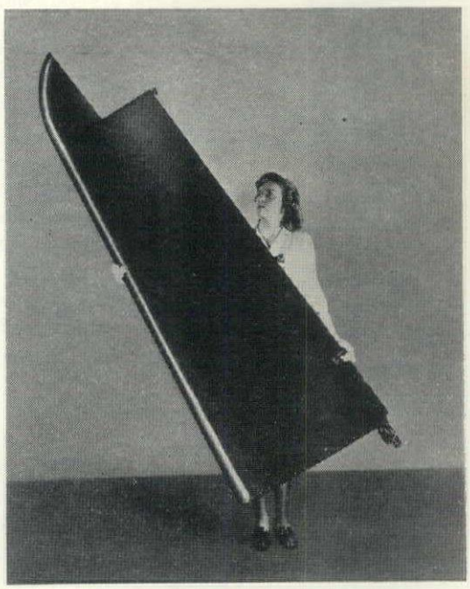
METALITE panel (above) is constructed by applying aluminum alloy face plates to balsa wood core (upper left). Flat panels are then placed in an autoclave where the face plates and balsa core are bonded together under moderate heat and pressure (lower left).

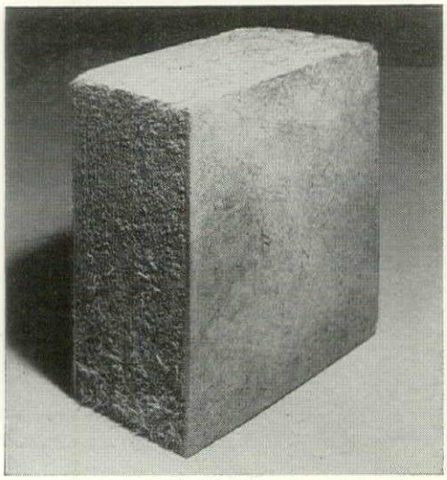
METAL FACED SANDWICH MATERIAL, developed for aircraft construction, is strong, lightweight structural material.

Metalite, a featherweight material possessing strength and durability, consists of thin sheets of high strength aluminum alloy separated by a thick, low-density core of balsa wood and bonded firmly together to form a single, rigid unit. The grain direction of the balsa core is set perpendicular to the metal faces. Where greater strength is required, a core material of greater density than balsa can be used. Metalite, developed by United Aircraft Corp., Stratford, Conn., was designed to meet the demand for a stronger, lighter and sleeker structural material required in the construction of high performance aircraft. It is bonded together under moderate heat and pressure, and may be fabricated in flat or curved sections. For flat work the parts are put together on a bench and the whole assembly placed in a mold afterwards. For curved work, several different methods are used. Developmental work on methods and techniques of fabrication during the past few years have resulted in practical production processes. Both theoretical and experimental studies have been made on design standards for resistance of the metal faces to failure by local wrinkling, resistance of the core to failure by transverse shear loading, and resistance of the Metalite unit to failure by breakage of the bond between the core and metal faces. Investigation has also been made on Metalite's fatigue strength, resistance to large variations in temperature, and resistance to moisture and weathering. Exhaustive laboratory and flight tests have proved the material's performance in aircraft. However, Chance Vought engineers envisage Metalite's use in other fields besides aircraft. These might include washing machine manufacture, radio cabinets, boxes or containers, prefabricated houses and other structures, where strength, lightness and durability are essential.

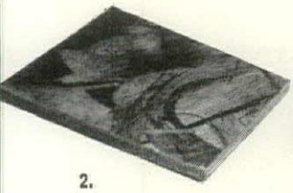


STABILIZER demonstrates the material's strength and lightness. Attached to a Corsair fighter it easily holds eight persons (above), while unattached it can be held in the hands (below).

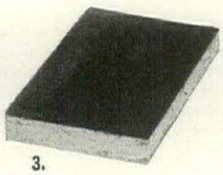




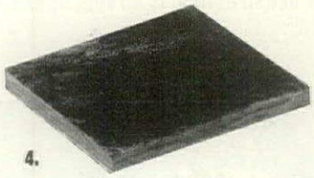
1.



2.



3.



4.

EXCELITE composition wallboards in various forms: **1.** sandwich of low density thermal insulating core and high density structural sheath faces, **2.** insulating board with decorative chip surface, **3.** with veneer surface, and **4.** high density structural Excelite.

LOW COST WALLBOARDS—made from waste and by-products—have wide scope of applications.

Excelite is the name of a new family of low cost composition wall boards which may help to solve today's acute building material shortages. Developed by Research for Industry, Inc., Cleveland, Ohio, it is simple to manufacture, durable and low cost and has a wide scope of applications. Laboratory tests have proved its fire resistance, tensility, density, distortion, water and acoustical absorption and nail holding strength.

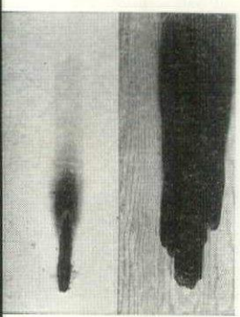
In the process of manufacture, natural lignocellulose fibers and a thermo-setting plastic binder are combined and molded to form a basic material of controlled and variable shape, thickness, density, etc. The ingredients are low cost waste and by-products; wood wool "excelsior", water, alkaline metallic salt, soybean protein and quicklime. The filler, consisting of 6 in. to 36 in. strands of tough, fibrous material containing natural, strength-giving resins and lignins, comprises 75 per cent of the finished material. Hemp, sisal, dried seaweed and wood wool "excelsior" can be used but the latter is universally available at low cost. Natural vegetable protein, obtainable from peanuts, soybeans, etc. furnishes the thermo-setting plastic binder. High calcium quicklime is thoroughly intermixed with the soybean flour to form the plastic bond. Water containing 5 per cent of silicate of soda, is the remaining raw material.

Excelite can be made in any thickness between 1/16 in. and 6 in., in any desired density from 5 to 50 lbs. per cu. ft., and in any form from which a die or mold can be produced. The countless combinations within these limits offer a wide choice of properties. In a lower density, Excelite is a highly porous, rigid structure having moderate physical strength with high acoustical absorption and thermal insulation. In a high density, structural strength is extreme. Acoustic and insulative qualities vary inversely with the degree of compression and density. Slight inherent resiliency causes strain to be distributed evenly throughout the material, and after deflection up to 10 degrees, it restores itself to normal.

Excelite may be sawn, drilled, planed, and formed and tooled like lumber. By coating with asphalt, flame-proof chemicals, acid and alkali-resistants, protection against extreme conditions may be obtained. Paints, varnishes, etc. may be applied by brush, air spray or calender. Paper, metals, wood veneers, fabrics, and other coating materials are easily adhered. Excelite may also be used as a core under other types of plastic using usual compression molding methods to apply the surfacings.

Potential uses are many. These include thick, porous batts of acoustical and thermal insulation for ceilings, mechanical refrigeration chambers, inter-walls; insulating wall board including exterior siding, roof shingles, and clapboards; structural sheets for cabinets, shelving and furniture; veneered panels for furniture; molded doors, sash, trim and millwork; containers; panels and other parts for vehicle bodies, veneered with sheet steel for maximum strength and minimum weight; table tops and cores for metal covered stove boards. Excelite is not yet in production, but pilot plant operations are near completion and early manufacture is anticipated.

BUILDING REPORTER



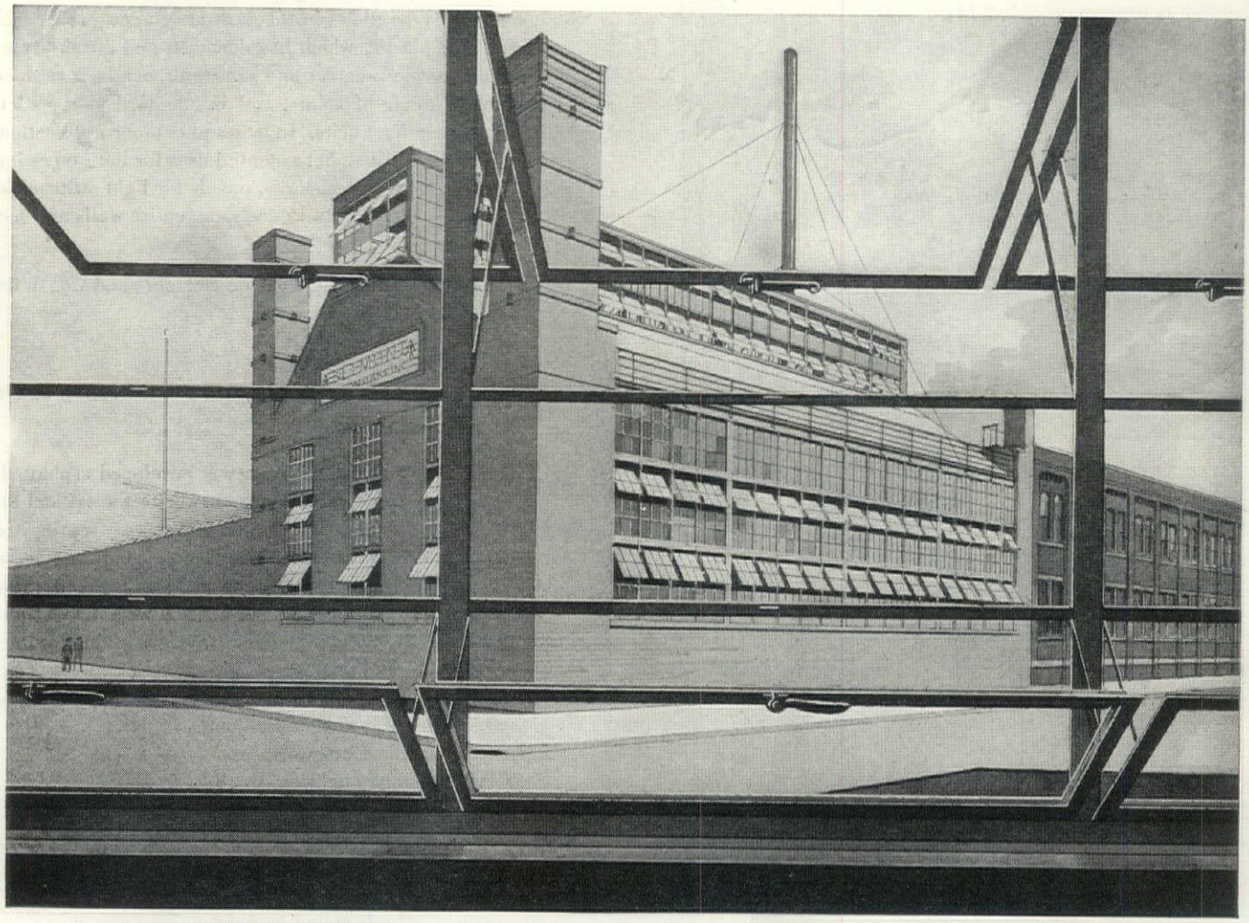
INTERIOR FIRE RETARDANT COATING is as effective as chemical pressure-impregnation treatment of wood.

Applied like paint to any interior combustible surface, Albi-R dries to produce a white, smooth, hard, flat, fire retardant surface that does not dust or peel. It is especially helpful for reducing fire hazards in homes, farm buildings, amusement parks, etc. for its use minimizes the spread of flame and the destruction by fire and heat of the material to which it is applied. Its effectiveness is the result of direct fire retardant action of the ingredients and the material's high heat insulating qualities when exposed to fire. Tests have proved it to be as effective as chemical pressure impregnation of wood in reducing fire hazards, and superior to known surface treatments. The new composition comes in powder form and is mixed with water on the job. Although it may be applied by brush or spray, spraying is recommended for those places where a smooth finish is desired. It can be tinted or painted, has excellent adhesion, and bonds equally well to untreated or painted surfaces. Dirt may be removed from the coated surface with a damp cloth, but an oil paint finish over the material is recommended for places which need frequent washing. Wallpaper may also be used over the coating without effecting its efficiency. Bond, appearance and fire retardant qualities of Albi-R are not affected by changes of temperature or humidity. One gallon of the material, priced at $2.95, covers from 125 to 200 sq. ft. of area depending upon the type of surface and method of application. Two coats are advised for good fire protection. Official tests run in accordance with Federal Specifications SS-A-118 (20 minutes' exposure to the A.S.T.M. time temperature curve) show that one coat of Albi-R on interior plywood and various types of fiber insulation board, with coverage from 140 to 200 sq. ft. per gallon, successfully meets the requirements of the "Slow Burning" classification.

Manufacturer: Albi Chemical Corp., 9 Park Place, New York 7, N. Y.

LUMINESCENT PLASTIC SHEETING for indoor and outdoor night use.

Plastic sheets made from new forms of Lucite resin containing luminescent pigments, offer many of the advantage of standard Lucite yet glow in the dark when exposed to ultraviolet, or after exposure to ordinary light. Both a fluorescent and a phosphorescent type of resin is now being produced. The fluorescent type glows when *(Continued on page 172)*



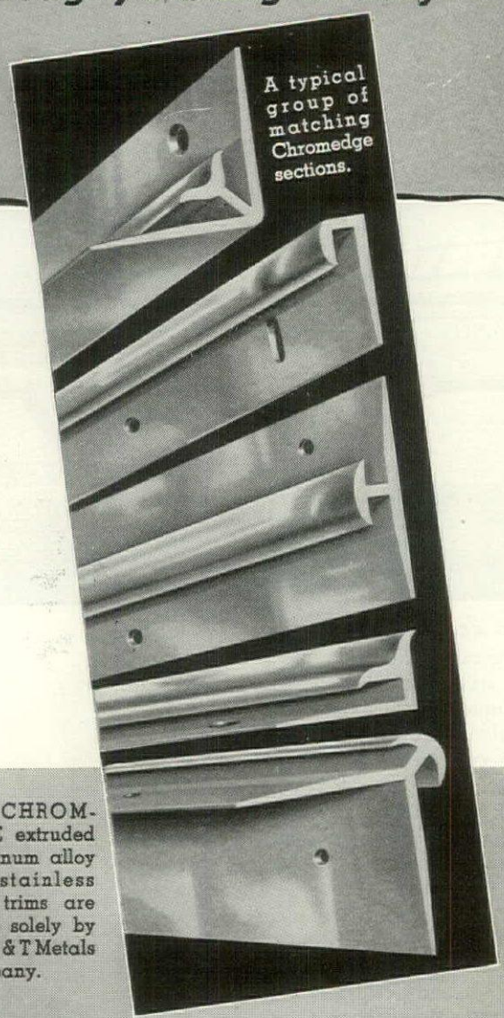
Recent Lupton Metal Window installation for Belmont Smelting and Refining Works, Brooklyn, N.Y. Architect: Alfred Shaknis, Glen Head, Long Island, N.Y.

Protection against heat and fumes . . . In buildings designed for processes developing extreme heat, fumes and gases, swift changing of the air is accomplished with window walls and monitors built with Lupton Metal Windows and equipped with Lupton mechanical operators. Here is positive assurance of improved working conditions, protection for workers' health. The abundant daylighting provided by Lupton Windows arranged in continuous bands tends to reduce accidents and increase working efficiency. Three types of Lupton Windows are available for industrial building—continuous windows, pivoted windows and projected windows. The projected-type is recommended for food processing plants or wherever screening is important. The Lupton line also includes industrial doors, architectural projected windows, intermediate projected and combination windows and residential casements. Write for the new 1946 Catalog or see our Catalog in Sweet's.

MICHAEL FLYNN MANUFACTURING CO.
E. Allegheny Avenue at Tulip Street, Philadelphia 34, Pa.

LUPTON
METAL WINDOWS

Another Advantage of
CHROMEDGE*...
Chromalite
the soft-toned finish of tough, lasting beauty



* CHROMEDGE extruded aluminum alloy and stainless steel trims are made solely by The B & T Metals Company.

Exclusive advantages of *Chromedge Metal Trims* extend from production to final use. They bring you the finest designs for all floor and wall materials, *plus* installation ease, lasting protection, and *permanent beauty.* The rich, velvety luster of B & T's Chromalite finish provides trims with a superb sheen that *never rubs off black* . . . stays neat and new-looking—even after long, hard service! (Chromedge trims are available also in standard bright finish.) Write for details.

Chromalite—proved in wartime use on army-navy equipment—is *fully* resistant to heat, cold, moisture, abrasion, and salt-spray.

The B&T Metals Company
Columbus 16, Ohio

exposed to ultraviolet rays or "black light", while the phosphorescent type glows in the dark after exposure to ordinary light. The plastic, which has demonstrated durability on exposure to severe weather and salt water, can be manufactured in a wide range of colors, and in standard sizes and thicknesses of regular Lucite. Indoor and outdoor applications are now being evaluated, but potential uses for both types include advertising signs, baseboards, panels for light switches, directional signs, architectural panels and entire walls and sections of bars.

Manufacturer: E. I. du Pont de Nemours and Co., Wilmington 98, Del.

ASPHALTED-GYPSUM SHEATHING for framing and other construction uses.

This sheathing board, with a newly developed asphalted gypsum, weather proof core, is one answer to the critical lumber shortage. It has been fully tested and has proved its strength and stability. Under extremely adverse conditions including the equivalent of 5½ yrs. of average rainfall, it showed a water absorption of only 3.4 per cent by weight, or about 1/12 the amount of water absorption of wood sheathing for the same exposure. In addition, there was no buckling, warping or opening up in the joints when dry. U. S. G. Sheathing is safe when piled unprotected on the job or nailed to the framework, and has the fireproof qualities of all gypsum building products. Secret of this new board is a gypsum core impregnated with an asphalt emulsion for superior resistance to weather. The face and back of each unit is also treated with water resistant Tripleseal. The boards, which measure 2 ft. wide, 8 ft. long and ½ in. thick, have tongue and groove edges for wind tight fit and strength. They eliminate the need for special measuring and sawing as they can be scored and snapped right on the studs. According to the manufacturer, eight man hours are sufficient to sheathe an average size small house using U. S. G. Sheathing, and sheathing costs will be reduced approximately 33 1/3 to 50 per cent by its use.

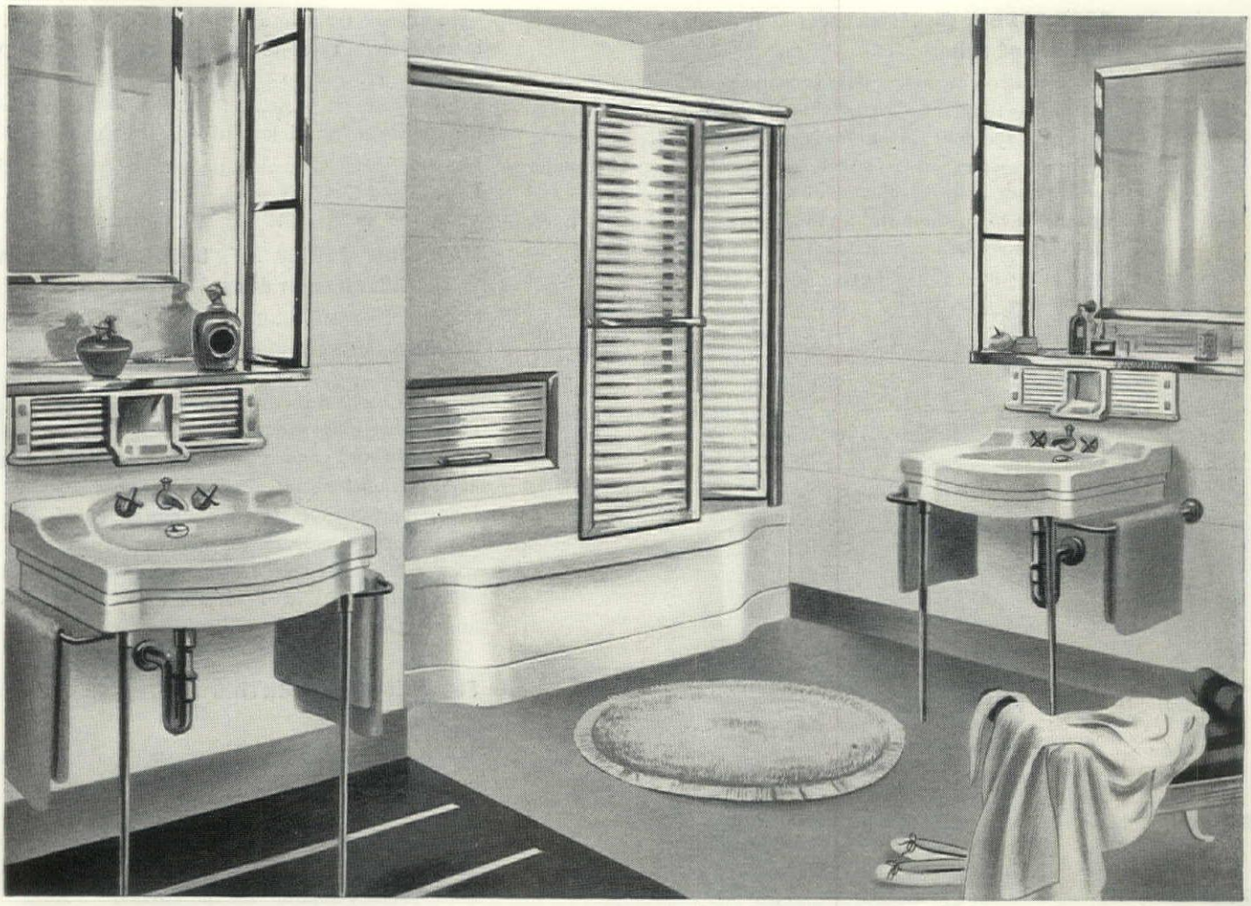


Manufacturer: United States Gypsum Co., 300 W. Adams St., Chicago 6, Ill.

DUAL PURPOSE LIQUID for priming and sealing plaster walls in one operation.

Plaster Grip, a liquid for priming and sealing plaster walls in one quick operation, can be applied when walls are still wet. Because of its high alkali resistance it eliminates the danger of discoloration from lime burns. One coat of the material seals walls so effectively that a single coat of gloss paint applied over the priming holds its lustre and color. Flat paint reveals none of the chalkiness usually shown over porous undercoats, and damp spots can be sealed with one coat. Plaster Grip has no objectionable odor and can be used over old paint. One gallon covers approximately 800 to 1,000 sq. ft. of new plaster and a treated wall may be painted in 48 hrs.

Manufacturer: Gillespie Varnish Co., Dey and Howell Sts., Jersey City 6, N. J. *(Continued on page 174)*



THE ROOM WHERE *Luxury* IS A FIXTURE

A bathroom with *Formed* Iron fixtures lends a note of luxury to any home, regardless of size or price. The smart styling of this light-weight plumbing ware blends pleasingly with up-to-the-minute ideas in home design. *Formed* Iron fixtures come in gleaming white or distinctive colors . . . providing the beauty and lasting service wanted by home builders and remodelers.

Formed Iron bathtubs, lavatories and sinks are not cast in molds like older types but are drawn from flat-rolled iron in huge presses. Consequently they are only a third as heavy, yet amply strong.

Armco does not make *Formed* Iron plumbing ware but it does supply leading manufacturers with the special kind of iron that draws perfectly and bonds enduringly with smooth, hard, acid-resisting porcelain enamel. Their customers have long depended on the familiar Armco triangle trademark as the guide to *special* quality.

If you'd like to know more about the advantages of *Formed* Iron fixtures, we'll be glad to ask the manufacturers to send you the full story. The American Rolling Mill Company, 1131 Curtis Street, Middletown, Ohio. Export: The Armco International Corporation.



SEE SWEET'S CATALOG for uses, advantages and general specifications of these Armco special-purpose sheets

Galvanized ARMCO Ingot Iron

ARMCO Galvanized PAINTGRIP Steel (also available with ARMCO Ingot Iron or copper steel base)

ARMCO Stainless Steels

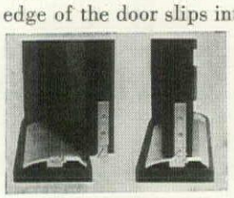
PORCELAIN ENAMEL ON ★ ARMCO ★ INGOT IRON

THE AMERICAN ROLLING MILL COMPANY • *Special-Purpose Sheet Steels*

BUILDING REPORTER

DOOR SADDLE eliminates under-door drafts, water, insects, dust and noise.

The Weather-Tite door saddle is comprised of a high strength aluminum alloy threshold with adjustable riser, and a key fitting for the door. An entirely new and patented principle, it prevents water, drafts, insects and dust from entering under the door. It realizes substantial savings in heating costs and provides a more comfortable, livable room. The saddle operates with the closing of the door. A key fastened to the outer edge of the door slips into a counter-sunk slot in the threshold and engages the movable riser in the saddle, carrying it into an upright position as the door closes. The simple adjustable key allows for sagging or warping of doors. With the door closed, a weather-tight fit seals the door and floor into one tight unit. Operation is automatic. There are no springs or complex parts to get out of order, and no ridges to trip over. Weather-Tite door saddle comes in 30 in., 32 in., and 36 in. lengths, complete with hardware and installation instructions. Price is $9.50.



Manufacturer: Columbia Industries, 19th Ave. and 36th St., Long Island City 3, N. Y.

MATCHING SERIES OF DECORATIVE METAL TRIMS simplifies interior design.

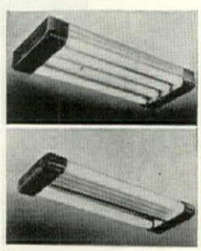
Uniform floor and wall trim can be achieved with the new, matching 120 Series of modern metal trims. Designs specially adapted for use as wainscot caps, wall panel strips, corner and cove base trims, are included in the matching group. Chrome-edge trims also embody structural and functional advantages. They are applicable to commercial, industrial, institutional and domestic fields, and sizes are available for linoleum, tile, rubber, wall board, plywood or similar materials used for floor and wall installations.



Manufacturer: B & T Metals Co., 425 W. Town St., Columbus, Ohio.

FLUORESCENT LIGHTING FIXTURES for kitchens and bathrooms.

Two new fluorescent fixtures, the Gorham, Model R-220, and the Sheffield, Model R-420, have been designed to conform with preferences expressed by home-owners in a recent survey conducted by the company. Unshielded ceiling units, they are applicable to any room of the house, but especially suitable for the kitchen and bathroom. The Gorham, containing two 20-w fluorescent lamps, is best suited to small or medium sized rooms, while the Sheffield with four 20-w lamps serves larger areas. Both models come complete with white reflectors, starters, and have polished aluminum end caps appliqued with gold colored floral design. They are easily installed, and will fit any electrical outlet.



Manufacturer: Sylvania Electric Products, Inc., 500 Fifth Ave., New York, N. Y.

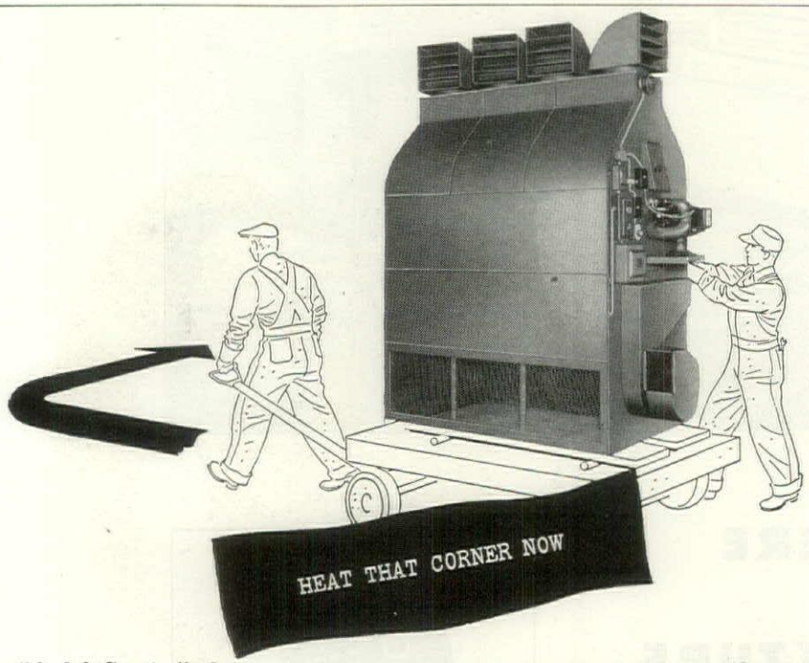
STANDARD ELECTRICAL SYMBOL GUIDE saves time in preparing plans.

The electrical symbol guide is a transparent plastic tool containing a ¼ in. scale rule, die cuts of electrical symbols and a french curve for connecting lighting outlets and their control switches. A chart illustrating all standard electrical symbols for use in architectural plans is also included. The guide is a time saver for the architect, as he has only to insert a pencil in one or more of the die cuts to outline any electrical symbol. Price is $.25 in small quantities.

Manufacturer: National Adequate Wiring Bureau, 155 E. 44th St., New York, N. Y.

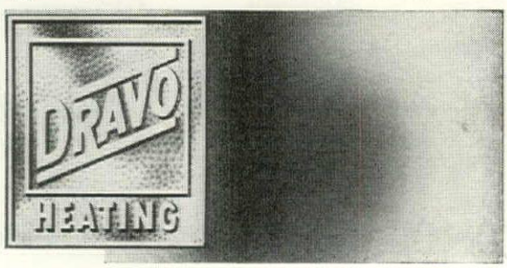
WINDOW TYPE COOLER FAN provides rapid air circulation for homes, small stores, offices, etc.

This 20-inch cooler fan for window installation will exhaust 3,500 cu. ft. of air per minute, in free air. Finished in ivory enamel, it is suitable for mounting in any window with a minimum opening of 20 in. square. All that is necessary for installation is the placing of two *(Continued on page 176)*

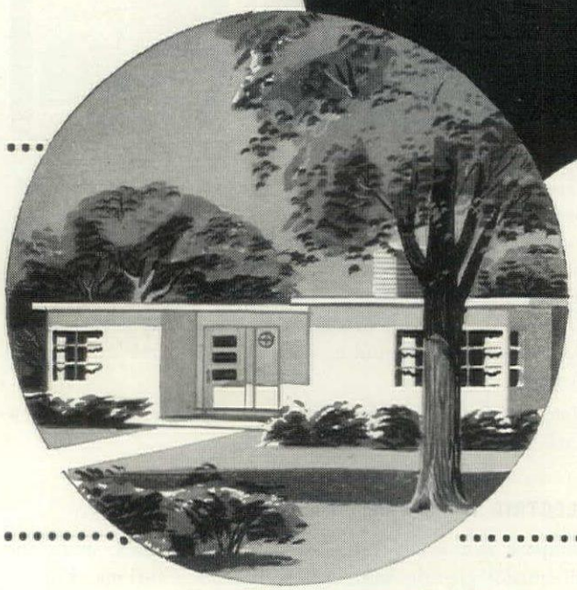


"Cold Spots" do occur – no matter how carefully a plant heating system is laid out. Dravo Direct Fired Heaters offer a simple quick solution that requires no alteration in the existing heating system. Simply truck in a Dravo Heater, connect it to an oil or gas fuel pipe and a power line and your "cold spot" is made comfortable with economical heat!

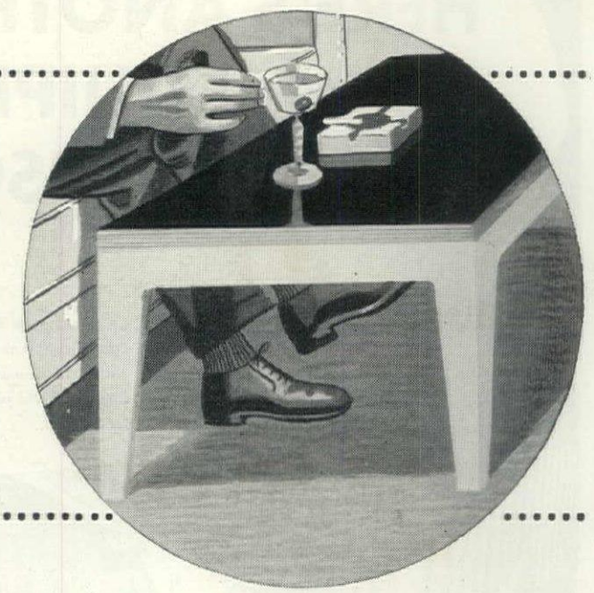
Dravo heaters are shipped to you complete, ready to connect and operate. Oil or gas fired heaters regularly yield 80–85% efficiency. There's nothing to freeze up, so no "stand by" loss is required. No specialized attendant is needed. Maintenance is negligible. Bulletin 514–A "Direct Fired Efficiency" is yours for the asking. – Address Dravo Corporation, Heater Department, 300 Penn Avenue, Pittsburgh 22, Pa.



How Kimpreg* puts plywood in the plastics class



PERMANENT PLASTIC SURFACE—An insoluble, flinty armor against wear and weather—that's what Kimpreg* means to plywood! Water-resistant, parasite-proof, durable. Kimpreg increases the abrasion resistance of plywood up to 5 times when dry; up to 33 times when wet.



FUSED-IN BEAUTY—The colors of Kimpreg Plastic Surfacing are fused-in—stain-proof and washable. They are unaffected by weak organic or inorganic acids, alkalies, or common solvents . . . completely impervious to alcohol. Kimpreg beauty protects and endures.



FREE—NEW KIMPREG FACT BOOK—Find out how Kimpreg + Plywood can work usefully for you. Get this colorful new book on Kimpreg. Full specifications . . . distinctive advantages . . . and application ideas you can use successfully. Mail the coupon for your free copy today!

Kimberly-Clark Corp., Neenah, Wis. Please send me the new free Kimpreg Book and names of manufacturers making plywood surfaced with Kimpreg.
AF-646

Name_____

Firm_____

Type of Business_____

Address_____

City, Zone, State_____

Kimpreg
REG. U.S. PAT. OFF.
PLASTIC SURFACING

A PRODUCT OF Kimberly Clark RESEARCH

*TRADE MARK

screw eyes in the window jamb, setting the fan on the sill, raising the window, and plugging in the cord to a convenient outlet. Features of the new fan include a capacitor motor for quiet, economical operation, and blades formed from sheet aluminum for large volume air delivery, quiet performance and minimum maintenance. Cabinet dimensions are 24 in. wide, 9 in. deep and 24 in. high.

Manufacturer: Emerson Electric Mfg. Co., 1824 Washington Ave., St. Louis, Mo.

PORTABLE ELECTRIC HEATER gives radiant heat.

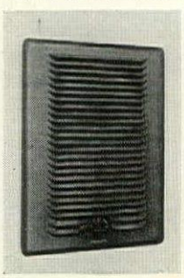
The Infralectric Heater, based on a French patent originally developed to heat the underground chambers of the Maginot Line without deoxifying the air, operates on a different principle than the conventional heater. The portable model has two heating elements back-to-back consisting of unbreakable, textured glass plates with an aluminum alloy ribbon fused to them to carry the current; the heater thus delivers heat in both directions at once. It uses 1,000 w. per hr. and gives no indication of operation—no flame, glow or fumes. Safe to operate, it will not cause searing burns if touched, or burn the rug or floor if upset. It is virtually indestructible. It can be dropped or turned over without damage, and cold water splashed on the glass will not crack it or hurt its efficiency. The aluminum frame, 20⅜ in. long, 19½ in. high and 2 in. wide on a 5¾ in. wide base, fits into the scheme of any room. Infralectric operates on AC or DC current, on any circuit of 15 amp. or more. It weighs approximately 20 lbs. and retails for $29.95. Research on the use of similar electric panels for built-in supplementary heating units is now being developed.



Manufacturer: Radiant Heater Corp., 521 Fifth Ave., New York 17, N. Y.

ELECTRIC WALL HEATER blows warm air to floor.

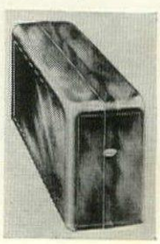
Compact and easily installed between ordinary studs, the Thermador electric wall heater contains a turbine type 16-blade fan behind the heating element driven by a 4-pole induction motor. It also incorporates a new type of horizontal grille work which directs the warm air toward the floor rather than permitting it to escape to the ceiling. This combination of forced air plus grille direction control, according to the manufacturer, offers greater efficiency than ordinary convection heaters. For summer cooling the fan may be used independently of the heating element to circulate air. Thermador units are available with either manual or thermostatic control in 2, 3, or 4 KW models, in moroccan brown wrinkle or prime coat.



Manufacturer: Thermador Electrical Manufacturing Co., 5119 District Blvd., Los Angeles 22, Calif.

FURNACE UNIT produces heat and domestic hot water, eliminates boiler.

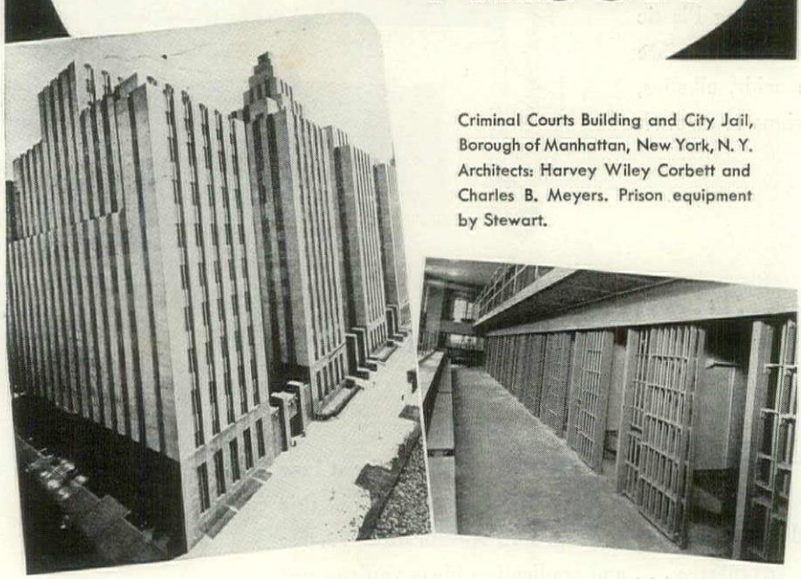
A new packaged heating unit, designed for old or new homes, produces both steam or hot water heat and domestic hot water. Combustion principles and materials developed during the war have made possible the elimination of the conventional large boiler and hot water storage tank. The unit combines boiler, fuel oil burner and complete factory installed combustion controls in a modern streamlined cabinet 36 in. high, 42 in. long and 22 in. wide. It is supplied with all necessary parts including Minneapolis-Honeywell controls, low water cut-off, central flame tube, 3 pass horizontal high pressure steam unit, flash boiler and hot water coils. Thus only simple piping connections are required. According to the manufacturer, the Whirl-O-Matic unit will produce heat and hot water instantaneously at high over-all efficiencies and at economical operating costs.



Manufacturer: Persiro Manufacturing Corp., 38 Keer Ave., Newark 8, N. J.

(Continued on page 178)

HERE'S ANOTHER Stewart EQUIPPED PRISON



Criminal Courts Building and City Jail, Borough of Manhattan, New York, N. Y. Architects: Harvey Wiley Corbett and Charles B. Meyers. Prison equipment by Stewart.

Among the more recent prison equipment installations by Stewart is the one illustrated. It is indicative of the close collaboration between the architects who designed the structure and Stewart engineers. This same service is available to all architects, builders and prison authorities whether the plans call for new construction, remodeling or rehabilitation, and for any size installation from a village lockup to a federal penitentiary. Stewart equipment includes Grating and Plate Cells; Doors; Lock and Locking Devices; Bunks; Tables; Seats; Iron Stairways, and all modern jail and prison equipment. You are cordially invited to avail yourself of the technical facilities offered by Stewart.

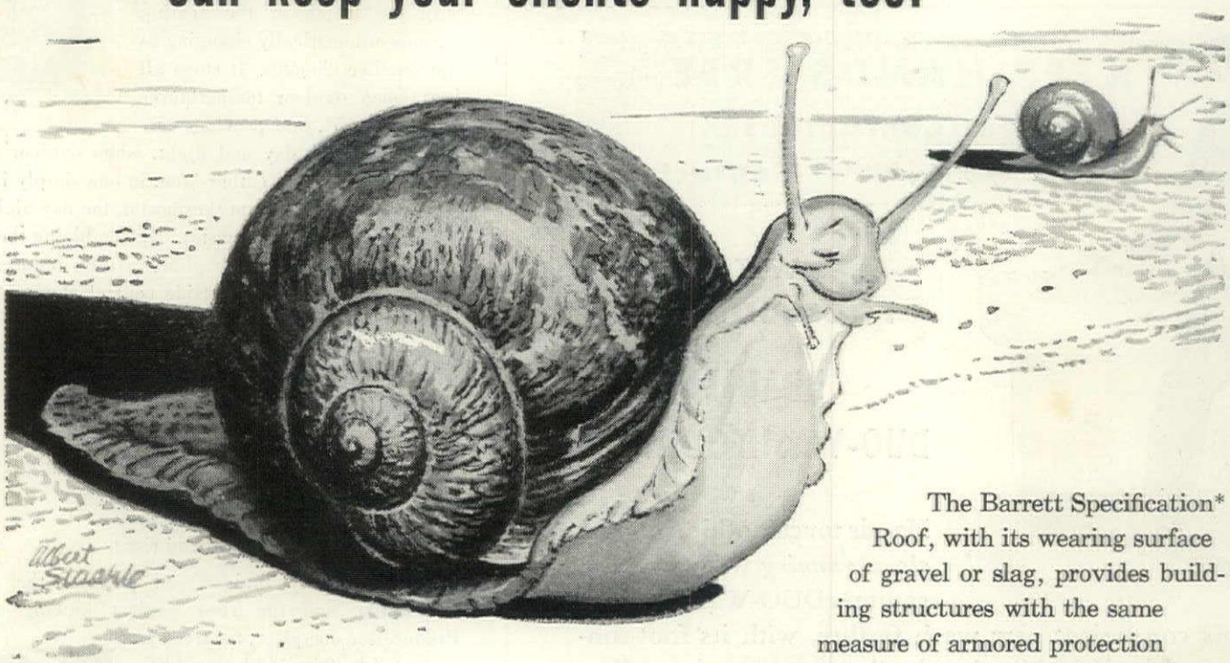
THE STEWART IRON WORKS COMPANY, INCORPORATED

1377 Stewart Block - - Cincinnati 1, Ohio

"Designers and Builders of Jail and Prison Equipment Since 1886"

You never saw a more satisfied building owner than The Snail. He likes his house so much, he takes it with him wherever he goes. It has an *armored wearing surface* that protects him from his natural enemies.

What keeps the snail snug and safe can keep your clients happy, too!



The Barrett Specification* Roof, with its wearing surface of gravel or slag, provides building structures with the same measure of armored protection from their enemies—rain, hail, fire, sun, mechanical wear and tear.

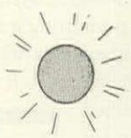
Built of alternate layers of coal-tar pitch and felt, and *capped with a heavy pouring of pitch* to hold the gravel or slag wearing surface in place, it is the strongest, toughest, longest-lasting built-up roof made. No wonder it can be bonded against repair and maintenance expense for as long as 20 years.

Many of America's most famous buildings are Barrett Specification Roofed. You can do your clients no greater service than to recommend this roof on the buildings you design.

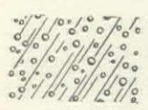
Over 90 years of successful roofing experience has demonstrated the sound value of the gravel or slag wearing surface of a Barrett Specification Roof:



1. It holds in place the heavy-poured (not mopped) top coat of coal-tar pitch—providing a doubly thick waterproof covering.



2. It provides protection against the sun's actinic rays which otherwise dry out the essential oils of the bitumen.



3. It protects the roof against mechanical damage, hail and wind, wear and tear.



4. It interposes a surface of fireproof rock between the building and flying embers—makes a roof that carries Fire Underwriters' Class A Rating.

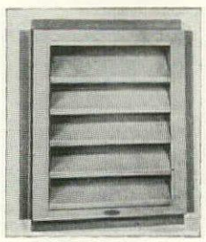
*Reg. U. S. Pat. Off.

Barrett Specification* Roofs

THE BARRETT DIVISION
Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.
2800 So. Sacramento Avenue Birmingham
Chicago 23, Ill. Alabama
In Canada: The Barrett Company, Ltd.
5551 St. Hubert Street, Montreal, Que.

BUILDING REPORTER

VENTILATING LOUVER for new residence attics.
Designed to fit between two normally spaced (16 in. centers) vertical studs, Ventilouvers fasten outside the sheathing with nails passing through flange holes into the studding. Siding covers the flanges thus no wood framing or wood trim is necessary around the outside. When used in brick buildings, in two course construction, flanges are imbedded between the two courses. Ventilouvers feature a one-piece steel frame and welded louver blade construction. The louver pitch excludes all weather and a framed insect screen covers the rear opening. This is quickly accessible for removal. Outside frame dimensions are 15 in. by 18 in. and other sizes are to be included in the line as well as types suitable for installation in old or completed construction. Swartwout Ventilouvers weigh 5½ lbs. each and are packed in pairs. List price is $2.75.



Manufacturer: The Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio.



WITH
FOOT-CONTROL

BRADLEY
DUO-WASHFOUNTAIN

Hands touch nothing but the clean *running* water when a sanitary DUO-Washfountain is used. This convenient new wash facility, with its foot-controlled spray, and self-flushing bowl, allows no water to collect and form contaminating scum.

The DUO was designed for small washrooms in factories, schools, institutions, and public buildings. One DUO replaces two ordinary washbowls with resultant savings in faucets, piping, plumbing connections, floor and wall space.

Water consumption is also reduced and much maintenance work and expense eliminated. DUO-Washfountains are available in white enameled iron or stainless steel with either roll rim or apron bowl. For complete details on this modern washroom convenience, send for new illustrated Bulletin 464-D. BRADLEY WASHFOUNTAIN CO., 2235 West Michigan Street, Milwaukee 1, Wisconsin.

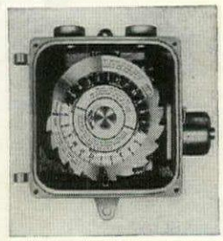


1946—25th Anniversary Year

BRADLEY Duo Washfountains

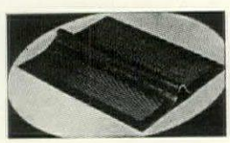
Write for Illustrated Bulletin 464-D

AUTOMATIC HEAT CONTROL for homes, commercial and industrial buildings is actuated by outside temperatures.
The Weather-Man is a completely automatic thermostatic control actuated by outside temperatures. It anticipates the building's heat requirements, automatically changing the time at which heat starts in the morning and shuts off at night, depending on the weather. During the day, it maintains constant temperatures by producing heat at regular spaced intervals with the length of the heating periods automatically changing as the weather changes. It stops all heat when outdoor temperatures rise above 65°, and provides continuous heating, day and night, when outdoor temperatures drop below zero. Weather-Man, in one simply installed unit, replaces the inside room thermostat, the day-night switch and the 65° high limit thermostat. By combining the functions of several instruments, it simplifies wiring, reduces service and provides advantages of outside control at a cost comparable to the ordinary controls it replaces. Weather-Man may be used to operate any gas or oil burner, stoker, circulating pump, fan, motor valve or zone valve, and may be used with all types of heating systems—steam, hot water, warm air or panel systems.



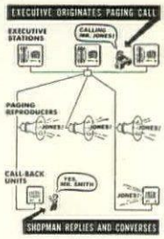
Manufacturer: Weather Controls Div., Automatic Devices Co., 53 West Jackson Blvd., Chicago 4, Ill.

STAIR TREAD covers step and riser.
The Double-Duty Stair Tread protects the step against foot traffic and the riser against kicking and scuffing. Produced in one piece, the tread is protected by 9 in. of black rubber matting and the riser by 7 in. It is available in two widths, 18 in. and 24 in.; is ⅛ in. thick, and may be either tacked or cemented.

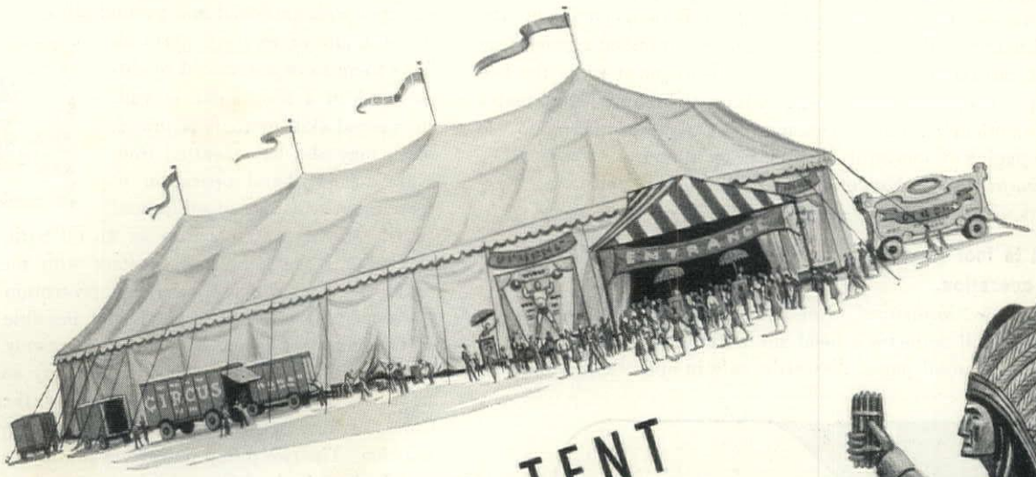


Manufacturer: American Mat Corp., 1708 Adams Street, Toledo, Ohio.

COMBINATION CALL BACK AND SOUND REPRODUCER UNIT for use with industrial communication systems.
Model C-18, a combined call back and sound reproducer unit, doubles the efficiency of the intercom-paging system by clearly reproducing the paging call and by permitting a reply directly with the originator of the call. Housed in a walnut cabinet, 7¼ in. high, 6½ in. wide and 5½ in. deep, it is used with combination intercom and amplified voice-paging systems having any number of fully intercommunicating master stations, trumpet speakers, and other standard reproducers. To operate, an executive or receptionist having an intercom master station depresses the paging button and calls the person desired. The amplified paging call is reproduced by trumpet speakers and C-18 units which give complete high fidelity voice



(Continued on page 180)



FROM CIRCUS TENT



...TO CIGAR STORE

It's GE for Better Air Conditioning

Air Conditioning a circus tent? Turn to G.E. for equipment. Air conditioning the corner retail store? Again G.E.

Here's the reason so many architects stake their reputation on G.E. . . . they *know* that G-E equipment, installed to G-E standards gives *complete, balanced* air conditioning.

Not just cooling*... but *adequate* cooling. Plus dehumidification*, filtering of dust, uniform circulation, and introduction of outside air. These are the famous *five* features that make G-E air conditioning *better* air conditioning. Insist on all five for your client.

Specify General Electric heating units, too, for homes or small commercial buildings. For steam, hot water, vapor or conditioned warm air systems, there's a G-E gas or oil unit you'll be proud to recommend.

General Electric Company, Air Conditioning Department, Section 6136, Bloomfield, New Jersey.

*In winter G-E Air Conditioning includes controlled heating and humidification.

GENERAL ELECTRIC

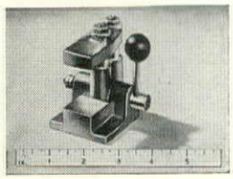
Complete Air Conditioning

coverage of the entire office or plant. On hearing his name, the person paged approaches a call back reproducer station, depresses the key and automatically is connected with the originator of the paging call. All other amplified reproducers and call back units are automatically silenced while the two way conversation progresses. A busy light signal illuminates automatically on any other master station attempting to use the paging system while a call is in operation.

Manufacturer: Executone Inc., 415 Lexington Ave., New York 17, N. Y.

JIG to tool very small parts is ruggedly constructed, safe in operation.

Two new "Ministure" Cone-Lok jigs have been developed to help fulfill industry's need for a standard clamping jig to tool very small parts. Versatile, safe in operation, possessing a minimum of moving parts and incorporating the Woodworth Company's Cone-Lok mechanism, they are ruggedly constructed with hardened and ground alloy steel working parts.

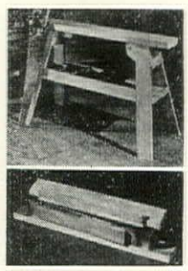


A minimum of wearing parts allows them to be assembled or dismantled in a few moments with no special skill or tools required. They may also be converted from right to left hand operation in two minutes using no additional parts. Moving parts operate in an oil bath, thus chips and cutting oils are kept from contact with the internal parts. Safety features provide maximum protection from accidents. Movement of working parts is not possible without action of the operating lever. The tray is positively clamped at any location in up or down strokes and any sudden weight or pressure applied to the tray instantly throws the second Cone-Lok into action. Thus holding the tray at the original position. The two pump jigs are available for working spaces of 1 in. by 1 in. by 1 in. and 1 in. by 2 in. by 1 in.

Manufacturer: N. A. Woodworth Co., 1300 E. Nine Mile Road, Detroit 20, Michigan.

SAW HORSE folds down for easy transportation and storage.

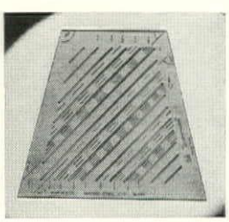
Unique Fold-Horse fully meets every tradesman's and home craftsman's needs, yet folds down in four simple operations to a convenient 8 in. by 8 in. by 42 in. size, for easy transportation or storage. Knocked down, it occupies less than ¼ of the space required by conventional saw horses. It is as sturdy as any one-piece horse and is assembled with 14 guage, cadmium plated, steel hardware. It has the usual 2 in. by 6 in. by 42 in. clear white pine top and a 9 in. by 36 in. tool tray. Hardware will not loosen through use and is not in the way to damage tools.

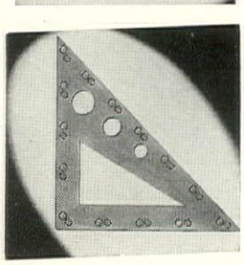


Manufacturer: Unique Tool Products Co., 4632 N. Clark St., Chicago, Ill.

DRAFTING AIDS for neater cross hatching and drawings.

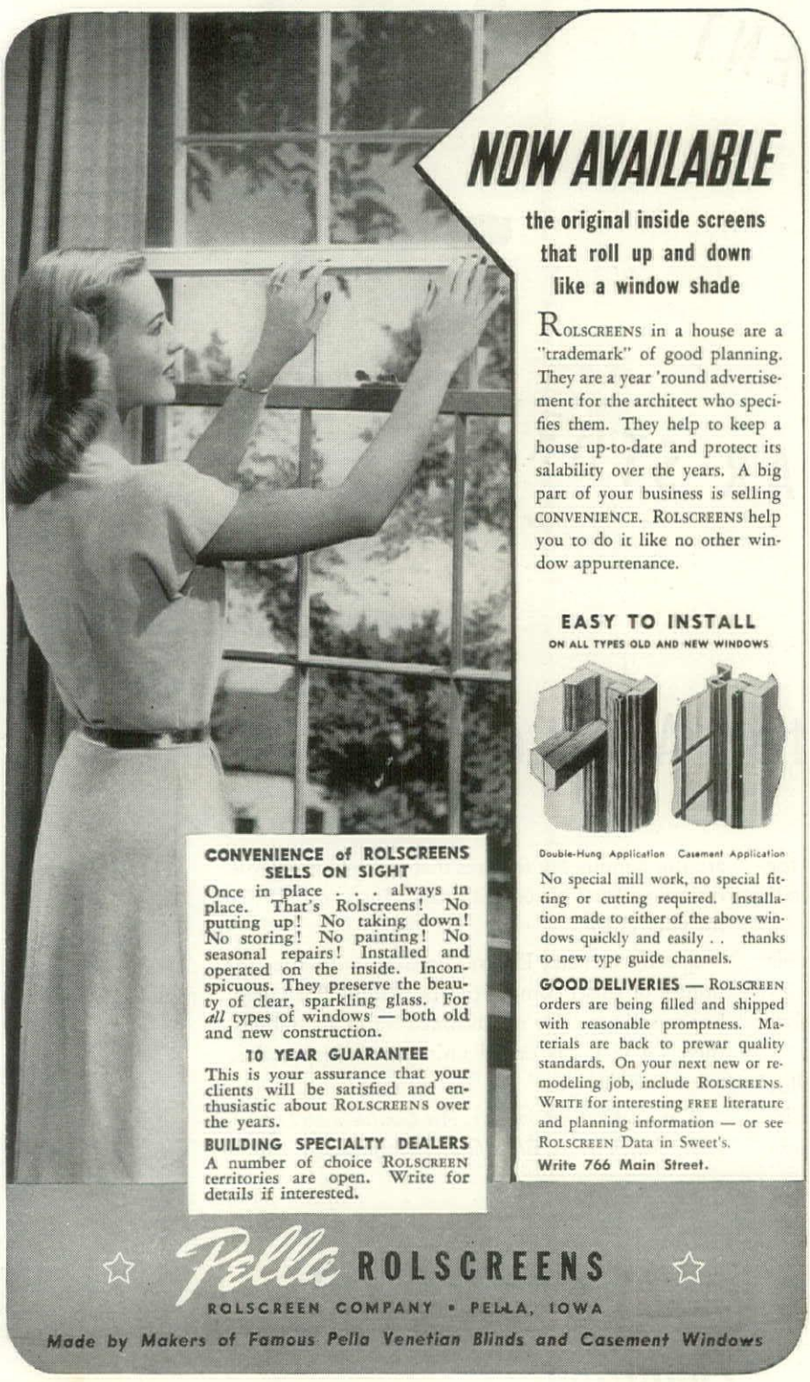
Two plastic drafting tools, the "hatching stencil" and "floating triangle" help produce neater drawings in shorter time. With the hatching stencil, available in 5 in. by 6 in. and 6 in. by 8 in. sizes, precision markings enable the user to predetermine exact location of the hatching. Lines at 30°, 45° and 60° to the horizontal can be drawn without a separate triangle, and the instrument can also be used as a 75° triangle if desired. The floating triangle employs embossed buttons to make the lower surface clear the drawing paper. It provides good fingerlift, has good inking edges, minimizes smudging, and combines 45° and 30 ° to 60° triangles. Each 45° triangle has a 30° to 60° triangle opening, and vice versa. They are available in 4 in., 6 in., 8 in., 10 in. and 12 in. sizes.





Manufacturer: Instrumaster Industries, Inc., Greenwich, Conn.

(Technical Literature, page 182)



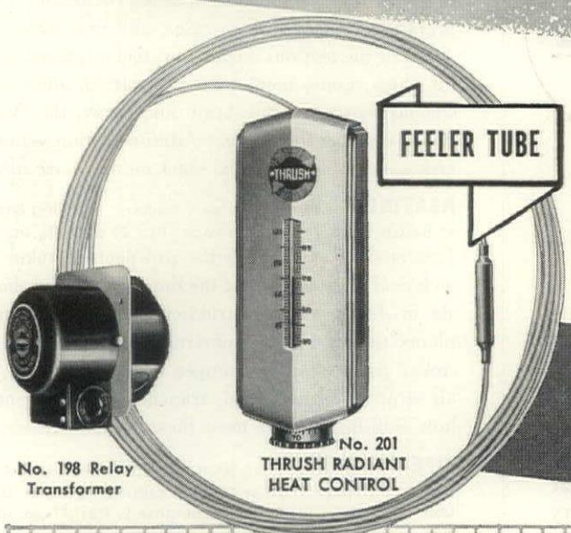
THRUSH Flow Control

SYSTEM WITH RADIANT HEAT

The most economical

AUTOMATIC CONTROL FOR WARM WATER HEAT

Regulates water temperature to maintain absolutely uniform comfort night or day, regardless of outdoor weather.



No. 198 Relay Transformer

No. 201 THRUSH RADIANT HEAT CONTROL

CONSTANT HEATING COMFORT *Without* CONTINUOUS CIRCULATOR OPERATION

HERE IS home heating at its best! Thrush Flow Control System of Warm Water Heating, whether used with direct heating units or with concealed piping, provides continuous radiant heat and a feeling of bodily comfort. The feeler tube, an integral part of the Thrush Radiant Heat Control, senses the slightest change in temperature and acts automatically to restore it before it can drop more than a fraction of a degree. Operating cost is low because continuous circulation is not required. The Thrush Circulator normally operates only a few minutes out of each hour and firing unit operating periods are shorter. For more information write Dept. H-6 or ask your Wholesaler.

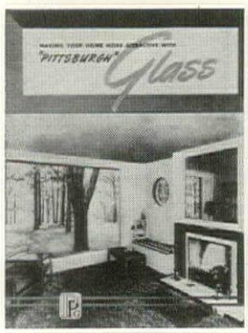
THRUSH WATER CIRCULATOR



Patented and Patents Pending

H. A. THRUSH & COMPANY • PERU, IND.

TECHNICAL LITERATURE



GLASS. Making Your Home More Attractive With "Pittsburgh" Glass. Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa. 28 pp., 8½ in. by 11 in.

This pictorial presentation features 101 different applications of glass in the home. Developments in home glazing such as double glazed insulating windows known as Twindow, full walls of plate glass, modern picture windows and corner windows are shown. Full color illustrations depict many uses of mirror—unusual walls, occasional mirrors over furniture and table tops. Applications of glass block and structural glass are also featured along with other products such as glass shelves and doors, and glass furniture tops. An illustrated section is also devoted to the use of glass in solar heating.

CONCRETE. Plastiment, The Concrete Densifier. Sika Chemical Corp., Passaic, N. J. 8 pp., 8½ in. by 11 in.

This booklet explains the action of Plastiment, a non-hygroscopic powder, on concrete, and the benefits accomplished by its use. Described as a concrete densifier, text discusses its benefits—workability, bleeding, shrinkage, strength, resistance to freezing, etc.



WHERE there's hard water, there's hard feelings.

Home-owners resent the extra labor, ruined linen, and plumbing repairs that hard water can cause in a house with "every modern convenience." In industry and commerce, it means high operating costs.

Today, forward-looking builders check the water supply on the property before construction begins. It's easy then, should the water prove hard, to provide Permutit* Water Conditioning.

Permutit industrial equipment and household water softeners insure not only soft, clear water, but better operation of all water-using appliances. (The annual saving—in soap costs and plumbing maintenance—will more than pay for a Permutit home installation.)

Write for full particulars to The Permutit Company, Dept. AF-6, 330 West 42nd Street, New York 18, N. Y. or Permutit Co. of Canada, Ltd., Montreal.

*Trademark Reg. U. S. Pat. Off.

FOR MORE THAN 30 YEARS

PERMUTIT

WATER CONDITIONING HEADQUARTERS

INSULATING CEMENT. B-H No. 1. Insulating Cement. Baldwin-Hill Co., 564 Klagg Ave., Trenton 2, N. J. 4 pp., 8½ in. by 11 in.

This pamphlet gives information on B-H No. 1 Insulating Cement which is described as an all-purpose thermal insulation. Tables and charts of efficiency, coverage and application data are included.

STEEL. Steel In The War. United States Steel Corp., 71 Broadway, New York. 164 pp., 9 in. by 12¼ in.

Steel In The War is a now-it-can-be-told story of industrial accomplishment, revealing the important part the steel industry played in the war. Generously illustrated, this diary of war production describes the conversion of the steel industry to war production, its expansion to meet the greatest demand for steel ever known, and the obstacles overcome by the industry's engineers. The volume traces the development of many new steels and new uses of steel which were invaluable to the armed forces, and which are now available for postwar needs. It covers the development of new production methods such as prefabrication of ship sections, and new welding techniques. A few of the sections devoted to steel applications include steel for ships, guns, bombs, transportation, and the home front. Official figures of the Army and Navy, the War Production Board and the Lend-Lease Administration which indicate the task accomplished by the steel industry are also included.

HEATING. How to Choose a Stoker. Whiting Stoker Sales Co., 11 South La Salle St., Chicago, Ill. 26 pp., 8⅞ in. by 5¾ in.

This booklet explains to the prospective stoker buyer in non technical language, what the domestic stoker should incorporate in design and construction for proper operation. It explains the operation, construction and design of individual stoker parts—hopper, hopper base, feed screw, burner tube, air supply, burner head, transmission and motor—and tells how Whiting Stokers meet these specifications.

PIPE FITTINGS. Flaggseal, The Threadless Fitting for I.P.S. Brass or Copper Pipe or Copper Tubing. Stanley G. Flagg & Co., Inc., 1421 Chestnut St., Philadelphia 2, Pa. 17 pp., 8½ in. by 11 in.

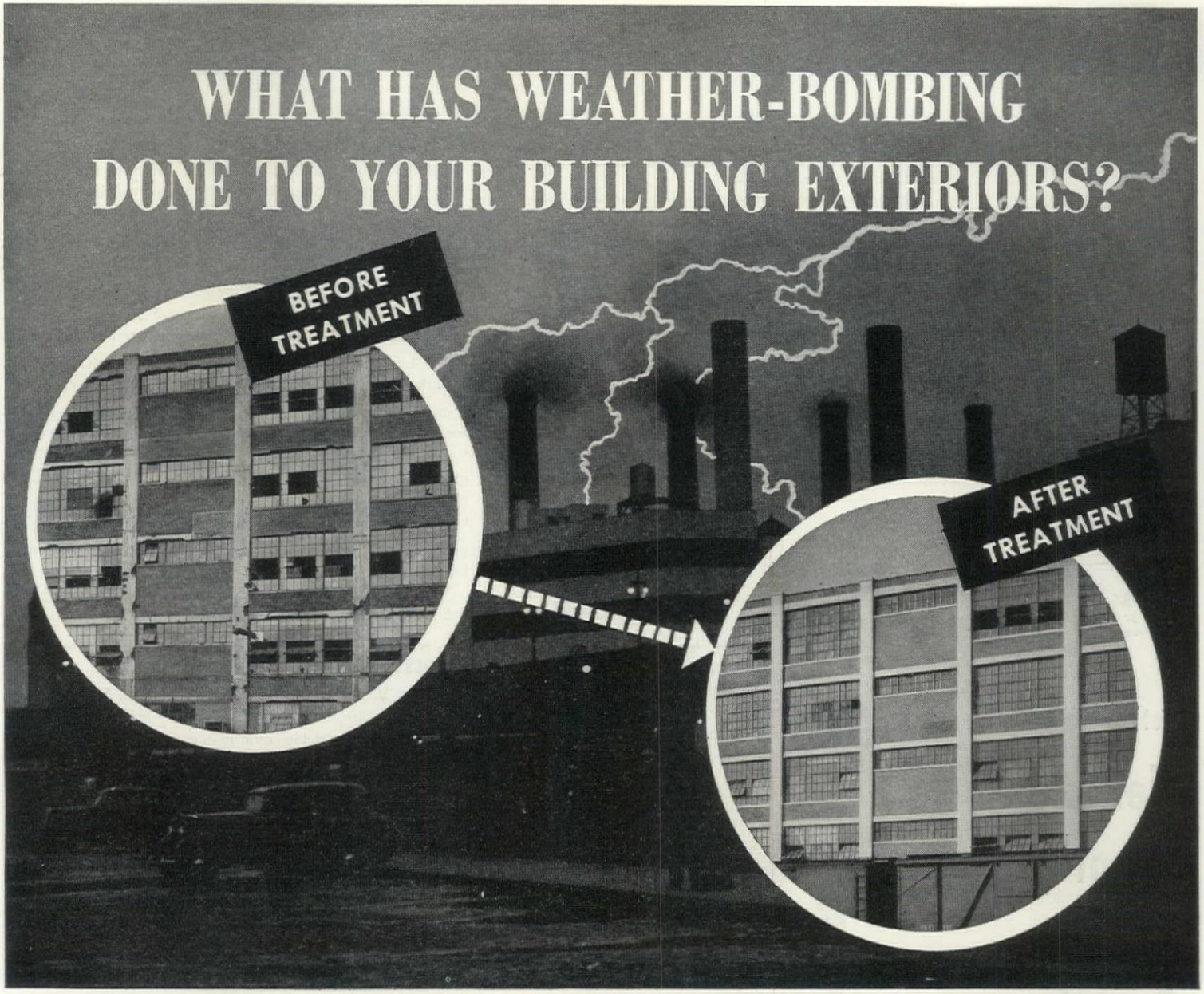
Types of cast bronze and extra heavy bronze Flaggseal fittings for making Silbraz joints with I.P.S. brass or copper pipe or copper tubing, are illustrated in this catalog. Sizes and dimensions of each are listed. The Silbraz joint is a threadless method of bonding pipe and fitting into a single unit by heating the silver brazing alloy in the port opening of the fitting with an oxyacetylene torch. The Flaggseal bronze fittings listed include various types of elbows, tees, crosses, couplings, adapters, branches, unions, flanges, etc.

KITCHENS. New Freedom Gas Kitchens, Designs and Blue Prints for Happier Living. New Freedom Gas Kitchen Bureau, A. G. A., 420 Lexington Ave., New York. 12 pp., 8½ in. by 11 in.

Ten kitchen designs of various shape, size and arrangement are presented in this booklet. Each design features a rendering of the kitchen, a detailed blueprint showing location of gas range, refrigerator, etc., and a suggested color scheme.

CARPET DEPARTMENT PLANNING. Setting The Scene For Selling. Lees-Cochrane Co., Inc., Bridgeport, Montgomery County, Pa. 34 pp., 14¼ in. by 11⅛ in.

This elaborate presentation of carpet department planning is designed to promote new display techniques in carpet merchandising. It gives information on choice of the spot for the department, partitions, what to do with structural columns, lighting, displays, ceilings, color, etc. Many drawings, details and floor plans augment the text. *(Continued on page 184)*



"Raincoat" Your Structures Now with Waterfoil

You can economically restore, beautify and protect your buildings. Waterfoil is made of irreversible inorganic gels. These gels bond both chemically and mechanically to masonry surfaces to form a dense hard coating. Because of its microscopic porosity the Waterfoil "raincoat" lets the masonry breathe and impedes water penetration which causes reinforcing bar rust, spalling and disintegration. Horn Waterfoil represents ten years of development and tests by the Horn Research Laboratories. It is unlike any other masonry protective coating, containing no oil, cement, lime, casein or glue. Send for the Waterfoil literature.

Horn Products and Methods Protect Millions of Square Feet of Surface Throughout the Nation

A HORN PRODUCT

WATERFOIL

THE UNIQUE TREATMENT FOR EXTERIOR MASONRY SURFACES

A. C. HORN COMPANY, Inc.

Established 1897

Manufacturers of Materials for Building Maintenance and Construction • Long Island City 1, N. Y.
Houston, Texas • Chicago, Ill. • San Francisco, Calif.
SUBSIDIARY OF SUN CHEMICAL CORPORATION

TECHNICAL LITERATURE

SAFETY. How To Danger-Proof Your Home-To-Be by D. Kenneth Sargent, A.I.A. Liberty Mutual Insurance Co., Boston, Mass. 30 pp., 7½ in. by 10 in.
This manual gives helpful hints for planning safety into the home. Divided into five parts, it includes sections on how to danger-proof against impact, fire and electrical hazards, and against hazards of poisoning, guns, knives and tools. Detailed drawings illustrate safety planning features in rooms of the house and structural hazards according to their importance as causes of accidents or fires. The stairs—landings, railings, approaches and lighting—get full attention. Safety features for the bathroom, hall, bedroom, passageway, kitchen and entrance porch are covered. The precautions and measures for controlling fires are discussed. Chimney construction, furnace, stoves and appliances, roof covering, electrical equipment, lightning arresters, electrical work, carbon monoxide and medicine hazards are a few of the other subjects included.





Get up to date on

Flexible Decorative Wall-Coverings . . .

We're putting out a new Flexwood sample book that shows the full line of 36 different varieties of these exciting, versatile decorative veneers.

If your present book doesn't include the latest veneers, or if you don't have one . . .

Drop us a note on your letterhead. We'll have your nearest Flexwood distributor get in touch with you. He'll bring your present book up to date . . . or tell you how to get a new one.

Look into LEATHERWALL
Genuine leather, 50" wide, in continuous lengths . . . for decorative wall treatments. Available in a variety of grains and colors. Used in combination with Flexwood it subtly complements the beauty of any wood. Write for sample.

* * *

Specify "Sparkle" with FLEXGLASS
Here's the bright spot in any interior. Real glass, firmly cemented to special fabric, and cut into rectangles, to facilitate application over curved surfaces. New sample kit shows full line of patterns and colors. Write for yours.

Flexwood and Flexglass are manufactured and marketed jointly by United States Plywood Corporation and The Mengel Company.

Leatherwall is manufactured by Blanchard Bro. & Lane, and distributed exclusively by United States Plywood Corporation and The Mengel Company.

United States Plywood Corporation Dept. F, 55 West 44th Street New York 18, N. Y.

REQUESTS FOR INFORMATION

CHRISTIAN W. BRANDT AND ASSOCIATES, architects and engineers, 1418 S. Woodward Ave., Royal Oak, Mich. requests information and catalogs on architectural, electrical and mechanical fields.

KENNETH G. GOLD, 41 Victoria Ave., Surbiton, Surrey, England, requests literature on prefabricated houses, construction materials, furniture and equipment for homes.

GEO. R. MCCLELLAN, architect, 484 Metropolitan Ave., Hyde Park, Mass. desires catalogs on all building products used in housing.

PERCY JONES GENERAL HOSPITAL, Battle Creek, Mich., Att: Capt. J. C. Baker, would like literature on hospitals.

GABRIEL SAAVEDRA, Avenida Mazatlan 58, Mexico D. F. desires information from manufactures of machinery for making light weight concrete bricks.

GAUTAM SARABHAI, 30 Rockefeller Plaza, New York, N. Y. would like to receive catalogs, and information on building materials, house prefabrication, industrial and institutional design.

VETERANS ADMINISTRATION, Branch Office No. 8, Midland Bank Bldg., Minneapolis 1, Minn., Att: T. B. Jenson, desires information on all types of building construction and products including heating, plumbing and lighting equipment and fixtures.

REQUESTS FOR LITERATURE

FREDERICK B. BARSS, architect, 268 Market St., San Francisco, Calif.

MARTIN BAUMANN, architectural designer, 801 E. Glen Ave., Milwaukee 11, Wis.

GERALD H. BENSE, architect, College of Architecture, University of Southern California, Los Angeles, Calif.

HENRY N. BETJEMANN, Box 69, Blue Point, Long Island, N. Y.

GEORGE W. BREITMEIER, 2834 North A St., Philadelphia 34, Pa.

WILLIAM B. CRAM, architect, Norwalk, Conn.

EDWARD R. DUFFIELD, architect, R.F.D. 4, Dowagiac, Mich.

DUNDEE COLLEGE OF ART and TECHNOLOGY, Dundee, Angus County, Scotland.

C. HARRY ERICKSON, architect, 1774 Massachusetts Ave., Lexington 73, Mass.

JAMES A. FARQUHAR, 59 Valley View Rd., Rochester, Kent, England.
FRANK H. FISCHER, builder, Rensselaer, Ind.

ROBERT GLASBERG, architect, 25, Chen Blvd., Tel Aviv, Palestine.

A. CHARLES JONES, architect, 434 West Second Ave., Flint, Mich.

NASHAAT MORSY, architect and surveyor, P.O.B. 1731, Cairo, Egypt.

NEW ZEALAND LIGHTCRETE AND CONCRETE CO. LTD., National Bank Chambers, Wellington, C.1., New Zealand.

ERNEST R. RANUCCI, Box 54, Plainfield, N. J.

THE RESIDENTIAL DESIGN & CONSTRUCTION CO. OF EVERETT, Monte Cristo Hotel Bldg., Everett, Wash.

WILLIAM I. ROSAMOND, JR., architect, 211 S. 7th St., Columbus, Miss.

DON SMITH, architectural student, 1362½ W. 38th St., Los Angeles 37, Calif.

STANDARD ELECTRIC MANUFACTURING CO., designers and builders, 2020 Richardson Ave. Dallas, Tex.

SAVO M. STOSHITCH, architect, 10328 Eastboine Ave., Los Angeles 24, Calif.

BUILDINGS AND STRUCTURES SECTION, DESIGN AND CONSTRUCTION DIVISION, U. S. Dept. of Agriculture, Rural Electrification Administration, Washington, D. C.

ALLAN WALLSWORTH, architect, 2846 N. Prospect Ave., Milwaukee, Wis.

E. L. WEMPLE, architectural student, 2840 Honolulu Ave., Verdugo City, Calif.

ROBERT WILMSEN, architect, 404 Tiffany Bldg., Eugene, Ore.

We're telling all America about BRIGGS Beautyware

Consistent advertising in leading national magazines is building a public preference for Briggs Beautyware on which you can capitalize. Specify Briggs and you give your clients and customers what they want.

Watch for the advertisement reproduced at the right. It will appear in *full color* in:

BETTER HOMES AND GARDENS . . . June

THE SATURDAY EVENING POST . June 15

AMERICAN HOME . . . . . July

BRIGGS MANUFACTURING COMPANY
3001 MILLER AVE.
DETROIT 11, MICHIGAN



Write for free booklet—"Planning Your Bathrooms and Powder Room"

Dream Bath...5×8 size

Here's eloquent proof that there's no limit to bathroom *smartness* — even in a limited space. Particularly now that *Briggs Beautyware is back!* For those lovely decorator colors in Briggs fixtures lend a look of luxury to *any* size bath. And the smart, streamlined formed metal designs — that Briggs is so famous for — naturally save oodles of room . . . room you can use so well for charming "extras." Save you plenty of hard cleaning, too . . . thanks to the super-smoothness of Briggs acid resistant porcelain enamel. Start planning your own long-dreamed-of Briggs Beautyware bathroom, today!

BRIGGS *Beautyware*

Briggs Manufacturing Company • 3001-F Miller Avenue, Detroit 11, Mich.



Pittsburgh Plate

TWINDOW

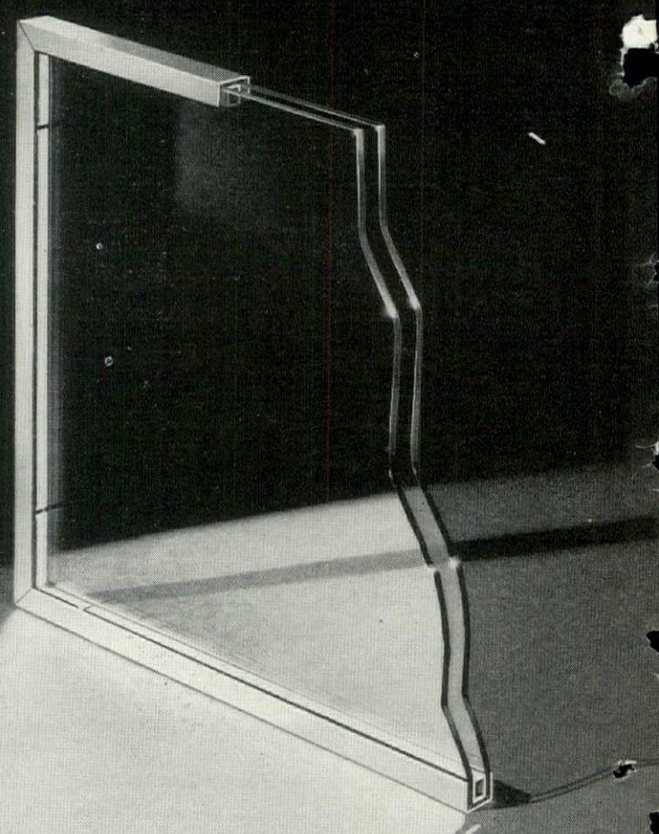
. . . the newest development in Double-Glazing!

TWINDOW

THE WINDOW WITH BUILT-IN INSULATION

Twindow consists of two or more panes of glass with a hermetically sealed air-space between, and a sturdy protecting frame of stainless steel.

It comes to you out of the same laboratories that have helped to create so many world-famous "Pittsburgh" Glass Products . . . and is an outgrowth of our 10 years of experience in supplying double-glazed window units for air-conditioned railroad cars.



"PITTSBURGH" stands for Quality Glass and Paint

PITTSBURGH PLATE GLASS

Glass announces—

TWINDOW offers new latitude in window design for every type of building



TIME WAS when excessive heat loss resulted from the installation of large windows. But not now! Today Twindow, Pittsburgh's new window with built-in insulation, makes it possible to gain all the popular advantages of large windows, without the sacrifice of heating or air-conditioning economy.

TWINDOW SAVES FUEL because it keeps cold air out and warm air in. In new structures it often permits the use of smaller, more economical heating and air-conditioning equipment.

PROTECTS HEALTH—Twindow adds to comfort and health the year 'round by minimizing downdrafts near windows.

AIDS AIR CONDITIONING—Twindow's efficient insulating properties help to maintain desired temperature and humidity levels in any climate.

IMPROVES VISION—Twindow is ideal for picture windows in homes or for any windows where clear vision is important. Its sealed air-space virtually prevents condensation.

INSTALLS LIKE A SINGLE PANE—Twindow is a simple, easily handled unit, completely prefabricated. It requires no complex installation procedure, and has only two surfaces to clean.

Remember, Twindow is the window with *built-in* insulation . . . a modern, practical means of improving the heating and air-conditioning characteristics of buildings you design or construct. Send the coupon now for additional information on Twindow. Pittsburgh Plate Glass Company, 2227-6 Grant Building, Pittsburgh, Pa.

Pittsburgh Plate Glass Company
2227-6 Grant Building, Pittsburgh 19, Pa.

Please send me, without obligation, complete facts about TWINDOW, the window with *built-in* insulation.

Name.....

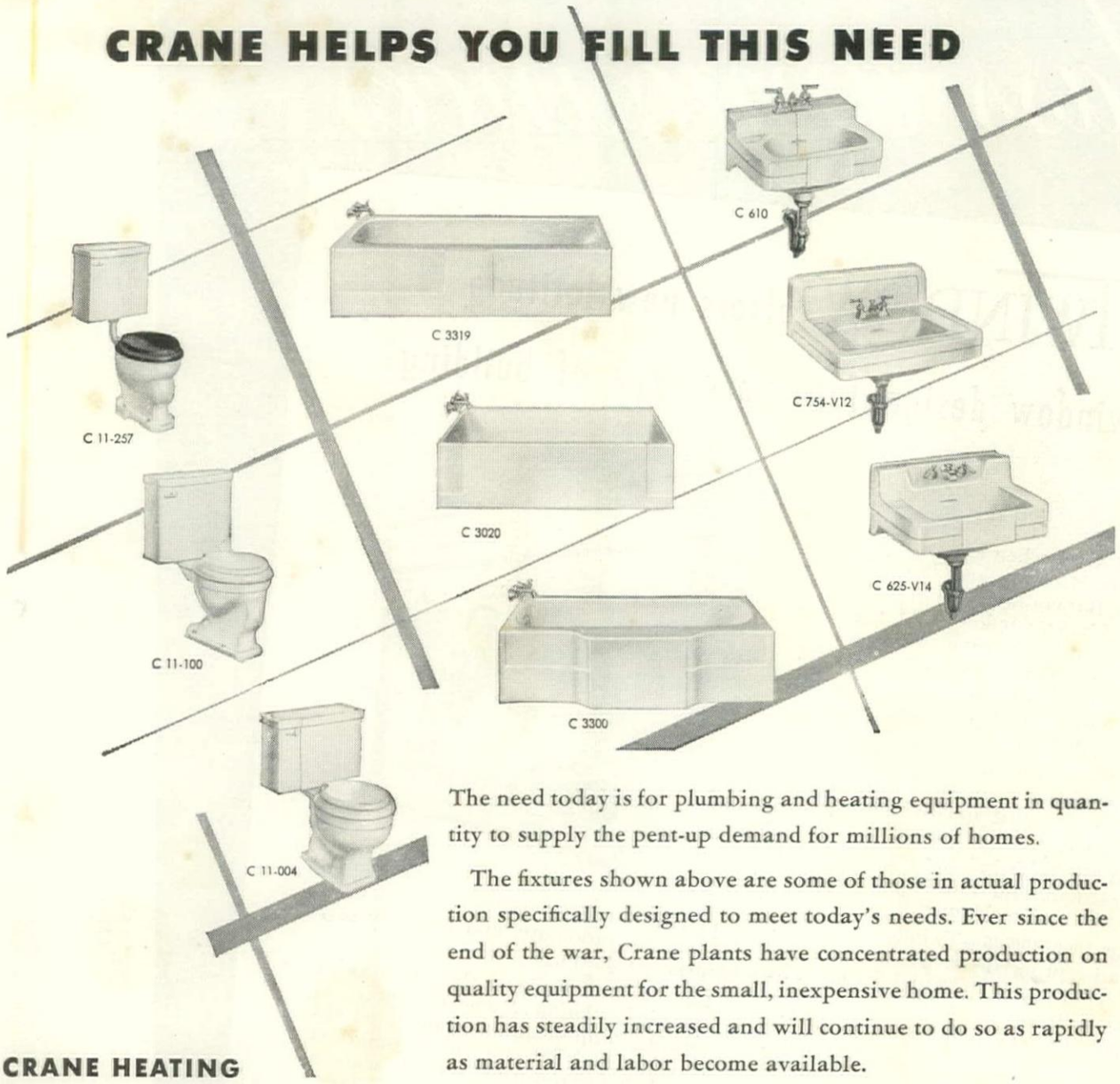
Address.....

City..... State.....

C O M P A N Y

VETERANS NEED HOUSES

CRANE HELPS YOU FILL THIS NEED



The need today is for plumbing and heating equipment in quantity to supply the pent-up demand for millions of homes.

The fixtures shown above are some of those in actual production specifically designed to meet today's needs. Ever since the end of the war, Crane plants have concentrated production on quality equipment for the small, inexpensive home. This production has steadily increased and will continue to do so as rapidly as material and labor become available.

The unprecedented demand for plumbing fixtures means that everyone cannot be supplied at once. We suggest that you anticipate your needs and discuss them with your Plumbing Contractor or Crane Branch. They will do everything possible to assist you.

CRANE HEATING

The Crane heating line includes boilers compact in size—low in cost, designed to burn coal, oil or gas. These are ideal for the small home.

In this line you will also find furnaces, stokers, oil burners, radiators, controls, pipe, valves and fittings—everything you need for efficient, economical home heating.

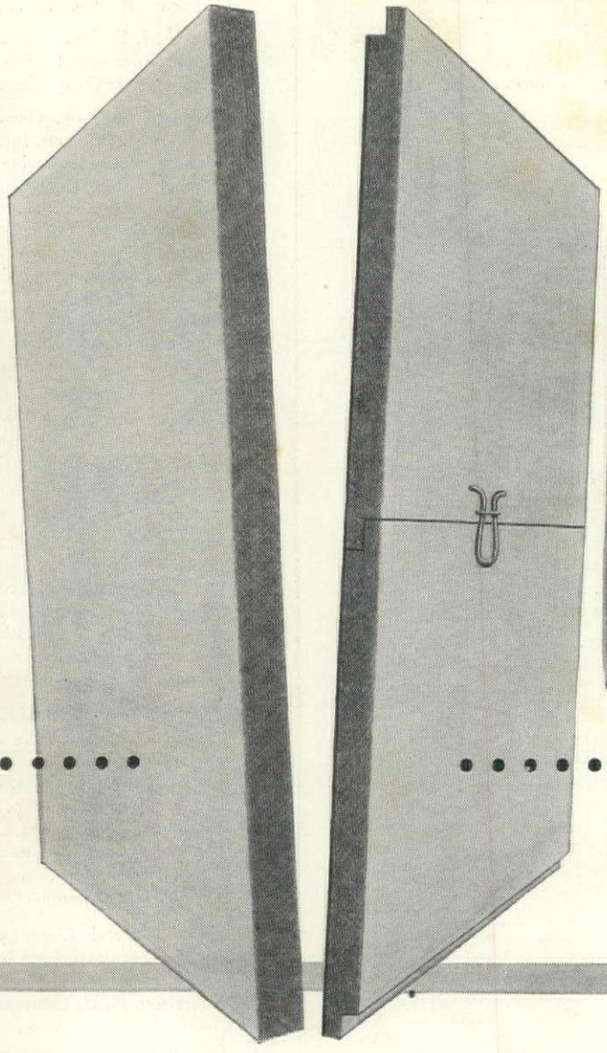
CRANE

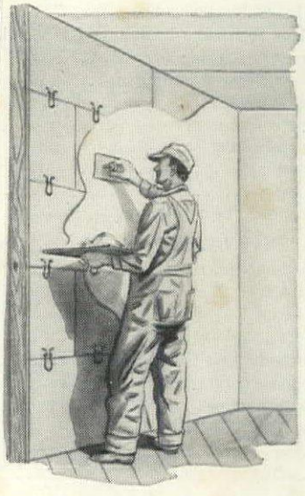
CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO 5

PLUMBING • HEATING • PUMPS
VALVES • FITTINGS • PIPE

NATION-WIDE DISTRIBUTION THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING DEALERS







OUTSIDE WALLS • • • • •

Insulite sheathing builds a strong, weathertight, windproofed wall . . . a wall with effective insulation.

• • • • • **INSIDE WALLS**

Insulite Sealed Lok-Joint Lath provides a strong, rigid plastering surface . . . plus a second wall of insulation.

Double Insulation—*PLUS VAPOR CONTROL*



Insulite Lok-Joint Lath, with asphalt barrier against the studs, retards vapor travel. And Insulite sheathing, being permeable to vapor, permits what little vapor that escapes the barrier to pass toward the outside.

Refer to Sweet's File . . . Architectural Section 10 a/9.

INSULITE

Insulates as you build

MINNESOTA AND ONTARIO MANDO FOREST PRODUCTS PAPER COMPANY

INSULITE
MINNEAPOLIS 2, MINN.
The Original and Best * wood fibre structural insulating board

* As determined by leading testing Authorities

SPECIFICATION AND BUYING INDEX

The advertising pages of FORUM *are the recognized market place for those engaged in building. A house or any building could be built completely of products advertised in* THE FORUM. *While it is not possible to certify building products, it is possible to open these pages only to those manufacturers whose reputation merits confidence. This* FORUM *does.*

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SORRY, NO PLANS AVAILABLE, BUT... *Another full color ad in the new Gold Bond series now running in the Saturday Evening Post. Like previous ads, this will probably bring a flood of letters from prospective home builders inquiring, "Where can we obtain the plans?" And the answer will be, "Consult your architect!" National Gypsum Company, Buffalo 2, N. Y.*



Ask your Gold Bond lumber and building material dealer how to have a home like this. He is headquarters for new building products and ideas.

So nice to come home to!

WHEN you swing off the bus at the corner after a hard day's work, think how nice it would be to come home to a new house like this —all your own! That's what a lot of us have been looking forward to for years. Of course, it doesn't have to be this Cape Cod cottage—nice as it is. You might want a "modern" or a colonial type. Or some other traditional style. Whatever the design, it will be your dream home—and you'll love every inch of it!

Few people build more than one home in a lifetime—so it's important to know before you start what to insist on to make your investment a sound one. Take walls and ceilings for instance. It's easy —for a few months or years—to hide cheap, second-rate quality in walls and ceilings. But today, thanks to Gold Bond's years of research, it's just as easy to build walls that will last virtually forever. Firesafe. Ever so much stronger structurally at no extra cost. Walls that turn away summer heat and keep you warmer in winter. That can be decorated in the most charming colors you've ever laid eyes on with a marvelous new paint that dries in one hour.

You can get these advantages and many more by demanding the six Gold Bond features shown below. They are part of the famous Gold Bond family of 152 better building products, produced in 23 modern plants and sold through 10,000 leading lumber and building material dealers.

There's a Gold Bond Dealer in your locality. See him first when you start thinking about new building or modernizing. He can bring you the latest in building products and ideas. He can really make that new home "so nice to come home to" in beauty and value at no more than the cost of ordinary construction. National Gypsum Company, Buffalo 2, N. Y.

Over 150 tested Gold Bond Building Products for new construction or remodeling add greater permanency, beauty and fire protection. These include wallboard, lath, plaster, lime, sheathing, wall paint, insulation, metal and sound control products.

DEMAND THESE SIX GOLD BOND FEATURES IN YOUR NEW HOUSE

GOLD BOND FIREPROOF GYPSUM SHEATHING



Big, weatherproofed panels of Gold Bond Storm Sealed Gypsum Sheathing add structural strength and built-in fire protection. Cost less than old-style sheathing.

GOLD BOND FLOATING WALL SYSTEM



A new way to build plaster interiors with "floating action" to withstand normal structural strain. Longer-lasting beauty. Greater fire protection, less room-to-room noise.

GOLD BOND FIREPROOF GYPSUM LATH



Gold Bond Gypsum lath is the perfect plaster base. Can't warp, expand or contract. Available with insulating vapor-seal, metal back as a barrier to condensation.

GOLD BOND FIREPROOF PLASTER AND LIME



Micron-sized Gold Bond Gypsum Plaster plus specially processed pure white Gold Bond Finish Lime build new beauty and lasting satisfaction into walls and ceilings.

GOLD BOND FIREPROOF ROCK WOOL INSULATION

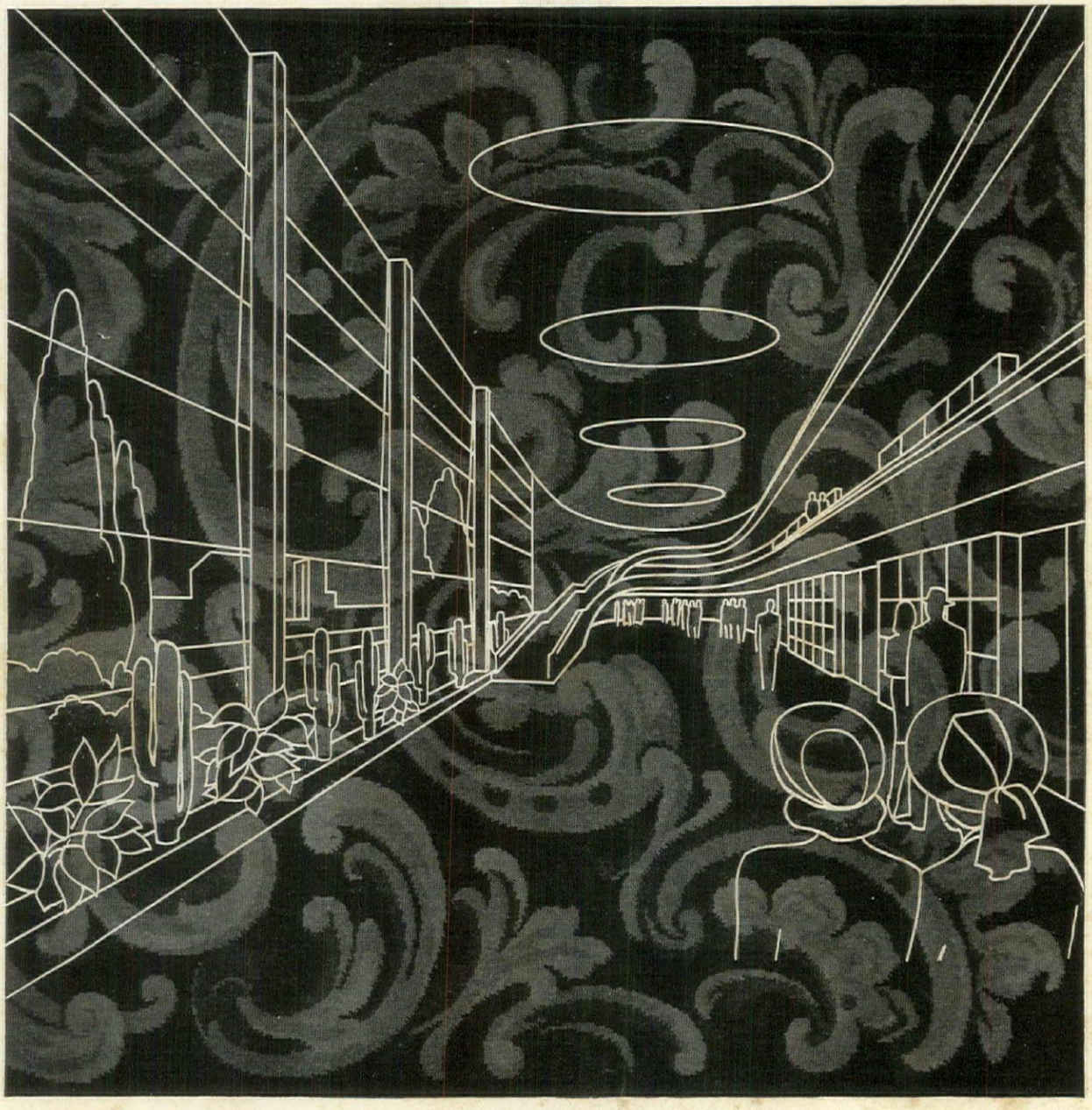


For greater year 'round comfort in new and old homes. New. Extra-efficient. Waterproof. Fireproof. Verminproof Cuts heating costs as much as 30%.

GOLD BOND—SUNFLEX 1-HOUR WALL PAINTS



Dries in one hour with no objectional painty, after-odor Easier to apply. This modern decoration is now available at your dealer's in a full range of colorful tones.



Plans for beautiful interiors specify **BIGELOW CARPETS**

Year in and year out hundreds of hotels, stores, theatres, specialty shops as well as ships, bars, de luxe trains and airlines have been Bigelow carpeted.

Big names like Statler, Waldorf Astoria, Saks 5th Avenue, Marshall Field, Tiffany, and scores of others call on Bigelow Carpet Counsel for practical planning advice. They have found that Bigelow's experience, with every kind of carpeting job, pays dividends to those who want the most for their floor covering dollar.

Plan ahead now with Bigelow carpet scheduled for weaving during 1946 and 1947.



BIGELOW-SANFORD CARPET CO., INC. • 140 Madison Ave., New York 16, N. Y.

The Martha Washington by ELJER

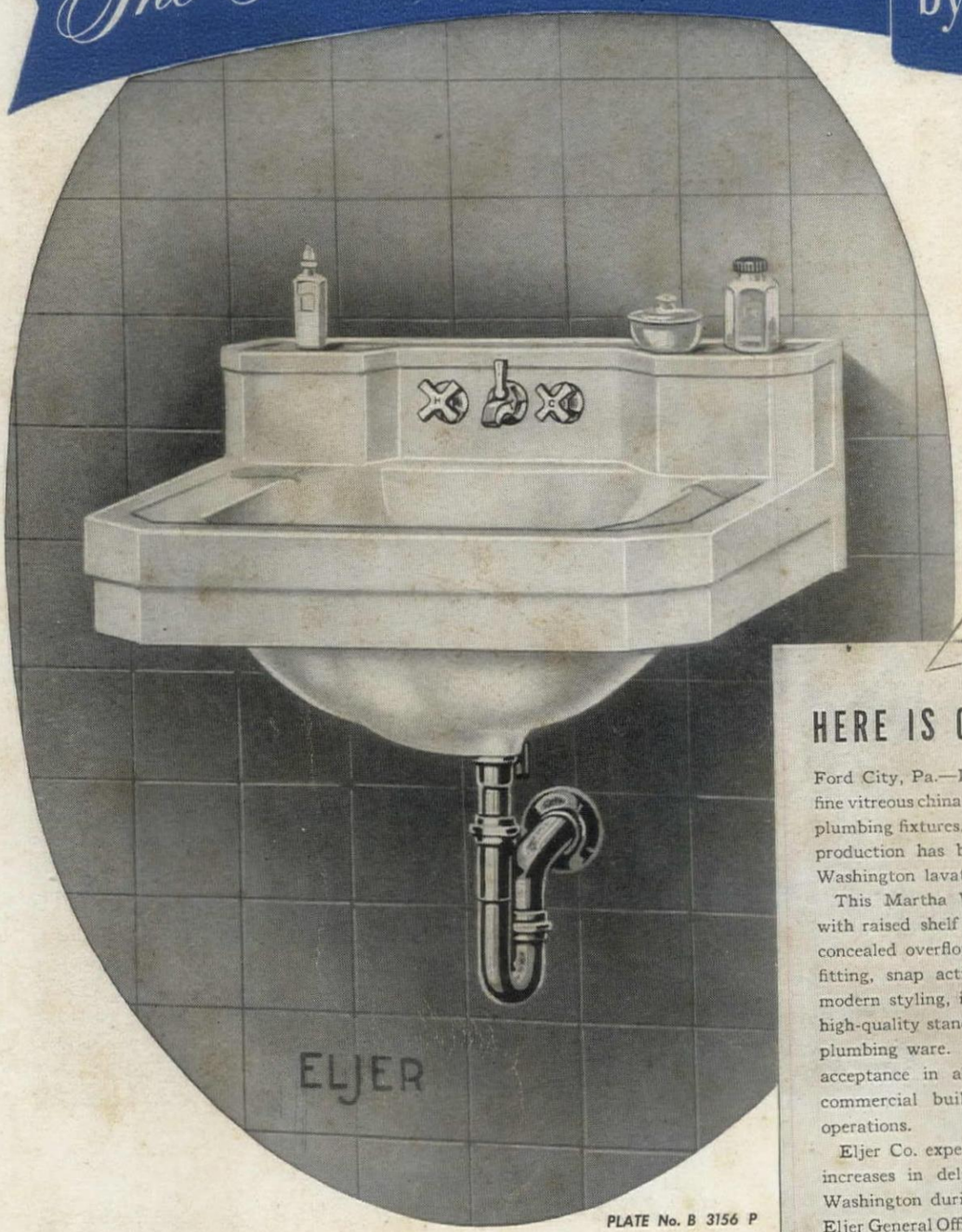


PLATE No. B 3156 P

HERE IS GOOD NEWS!

Ford City, Pa.—Eljer Co., producers of fine vitreous china and enameled cast-iron plumbing fixtures, today announced that production has begun on the Martha Washington lavatory.

This Martha Washington 20″ x 18″ with raised shelf back, anti-splash rim, concealed overflow, combination supply fitting, snap action pop-up waste and modern styling, is engineered to Eljer's high-quality standards in vitreous china plumbing ware. It will find immediate acceptance in all types of home and commercial building and remodeling operations.

Eljer Co. expects to achieve constant increases in deliveries of the Martha Washington during the coming months. Eljer General Offices are at Ford City, Pa.

KEEP YOUR WAR BONDS!

Remember: Adequate housing will eventually mean at least two bathrooms in every home.

ELJER CO. . . . FACTORIES AT

FORD CITY, PA. • SALEM, OHIO • LOS ANGELES, CALIF.

SINCE 1907 MAKERS OF FINE PLUMBING FIXTURES

Lasting SERVICE ASSURED!

Versatility of The "OVERHEAD DOOR" with the Miracle Wedge is amply illustrated where multiple installations are required. This door is adaptable, for instance, to warehouse loading platforms, where it conserves time and labor. Shipments are more readily accessible and are speeded on their way more swiftly. The "OVERHEAD DOOR" is built as a complete unit to fit any size opening and blends with any style of construction. Quality materials and expert engineering insure continuous operation in all weathers. For industrial, commercial, or residential use, specify The "OVERHEAD DOOR."

TRACKS AND HARDWARE OF SALT SPRAY STEEL

Any "OVERHEAD DOOR" may be manually or electrically operated. Sold and installed by Nation-Wide Sales — Installation — Service.



COPYRIGHT, 1946, OVERHEAD DOOR CORPORATION

The "OVERHEAD DOOR"
TRADE MARK
WITH THE

OVERHEAD DOOR CORPORATION
HARTFORD CITY, INDIANA, U. S. A.